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Clinical Medicine and Surgery

★ Editorial ★

Emil von Behring

Discoverer of Antitoxins

THE younger physicians have a tendency to take more or less for granted the potent remedies against disease which they now find available to them, and to assume (though they know better) that they have always been at hand. But thousands of medical men now in active practice can remember the pre-antitoxin days and their heart-breaking struggles against the terrible child killer, diphtheria, though many, if not most of them, have forgotten the name of the man who gave the world the specific antitoxin which has since saved an untold number of young lives.

Along in the eighteen-eighties, Pasteur had noticed, in his studies on chicken cholera, that a clear filtrate from cultures of the organisms of that disease would produce pathogenic effects (because it contained toxins). In 1888, his pupils, Roux and Yersin, got the same results with filtrates of diphtheria bacilli. In 1889, Buchner had proved that certain blood-serums were bactericidal. Thus the stage was set for a discovery of incalculable importance.

In 1854, at Hansdorf, Prussia, the man who was to make this discovery, Emil von Behring, was born. His early life was uneventful, and after he had completed his medical education he became a surgeon in the Prussian army, but unlike some others, he continued his studies indefatigably.

About the time that Buchner made his announcement, Dr. von Behring was working in Koch's laboratory with the Japanese physician, Kitasato, and between 1890 and 1893 he demonstrated that the blood-serum of animals which had been made immune to attenuated diphtheria toxins by repeated injections of these substances, would produce immunity to large doses of the toxins when injected into susceptible animals, by destroying the toxins.

The next step was the employment of this antitoxic serum in clinical cases of diphtheria, and the results of these experiments were so successful that, in 1894, von Behring began to produce his antitoxin on a large scale. As other physicians used it, his findings were so fully confirmed that the antitoxin was promptly accepted as the standard specific treatment for diphtheria. For this discovery, he received the Nobel Prize in medicine, in 1901.

The fame which accrued to Dr. von Behring as a result of this work resulted in his appointment as professor of hygiene at the University of Halle, in 1894, and at Marburg, in 1895. He did not, however, rest upon his laurels, but continued his studies of immunity during the rest of his life (which came to a close in 1917), discovering, among other things, an agent for immunizing cattle against tuberculosis, and a new type of diphtheria antitoxin, which he announced in 1913.

Of course, the antitoxin has been vastly improved and rendered more potent since von Behring's time, but it is still the child of his keen and fertile brain and his tireless labors, and every time we save the life of a child by the use of his discovery, we should breathe a prayer of thanks to the simple, sincere, and hardworking Prussian army surgeon who made our success possible.

Birth Control and Death Rates

THE recent annual report of the New York State Commissioner of Health (Dr. E. S. Godfrey, Jr.) contained some highly interesting figures: The maternal death rate from all puerperal causes has been reduced 50 percent in the past ten years (only 255 such deaths in all up-state New York, in 1939); the infant mortality (all ages), in the same territory, was the lowest on record (41 per 1,000 live births), the death rate having been reduced, since 1915, by 44 percent for infants less than one month old, and by 73 percent for the older ones.

In 1939, the New York birth rate was 13.7 per 1,000 population (the second lowest in the history of the state), but the rate of *parenthood* (*first* births) *increased* (there were 9,000 fewer births than there were in 1928, but *5,000 more first* births).

It should be remembered that, during this period, the restrictions upon the professional dissemination of contraceptive information were removed or greatly relaxed, and that these figures may be considered as portraying a cross-section of conditions in the entire country.

These figures are powerful evidence, if not complete proof, of several things:

1.—That birth control information, by reducing the number of pregnancies among women in unsatisfactory circumstances, has permitted the mothers to come to labor in better physical condition and to receive more adequate professional care.

2.—That the reasonable spacing of pregnancies has resulted in the birth of stronger babies, so that, although fewer are born, *more of them live* to grow up, which represents a tremendous *economic* saving, to say nothing of more intimate and personal matters.

3.—That the fears of certain alarmists, who have declared that a widespread knowledge of contraceptive technics would result in destruction of the urge to parenthood, are wholly groundless. (Those who know anything about human psychology have always realized that these fears were either ridiculous or hypocritical, since the urge to parenthood is just as general and imperative as the sex urge).

Since recent surveys show that between 75 and 80 percent of the people of this country (85 percent of those less than 30 years old) favor the widest possible distribution of contraceptive information; and since the results of the barely moderate education programs achieved up to now have been so definitely beneficial in ways that can be shown in figures (without counting the incalculable improvements in family relations and general happiness), it behooves all of the younger physicians who plan to devote their lives to clinical practice to familiarize themselves, *at once* (if they have not already done so), with the modern and reliable contraceptive technics, and to be prepared to give sound and adequate instruction along these lines to all of their married and about-to-be-married patients who ask for it, so that these people may not fall into the hands of charlatans, because they are turned aside by an unintelligent refusal to give it, but may find a new and deeply personal reason for looking to their family physicians for such help and counsel as they, of all the world, are, or should be, best prepared to give.

I count it a piece of skill in a physician, far surpassing the most admirable cures, to preserve a man from all disease.—DR. RICHARD BROWNE (1683).

Earthly Immortality

IRRESPECTIVE of what one may believe or know regarding the survival of individual consciousness beyond the change called death, there is a type of limited, mundane immortality which is within the reach of everyone who cares to strive for it and is well worth the effort entailed. This immortality is based upon worth, work, or words, or any combination of these.

Men are remembered, indefinitely, for what they *are*—the kind of human beings, citizens, neighbors, husbands, fathers, sons, or friends they were when they inhabited bodies. That is, their memory goes on if they were conspicuously satisfactory or disastrous in these relationships. Jesse James is almost as immortal as George Washington, though few of us would care for his type of fame.

Men are remembered for what they *do, build, make, or discover*, provided their acts, constructions, or discoveries are of benefit to mankind. Few remember who built the first armored warships, but many can tell one, at once, who built the first steamboat.

Men are remembered for what they *say and write*, if their utterances are sufficiently helpful or facinorous; but more immortality has been given by those who have been helped by Plato or Marcus Aurelius than by the ones who have been corrupted by Machiavelli.

The basis, then, of this earthly type of immortality is good character, useful industry, and helpful communication; and these are, to a greater or less extent, within the reach of all. Be good, after the highest pattern you can visualize; do good—think, create, be active; speak (with tongue or pen) honestly, sincerely, kindly, and earnestly, and you will be remembered after your corporeal frame has crumbled into dust.

There are two worlds: The world that we can measure with line and rule, and the world that we feel with our hearts and imagination.—LEIGH HUNT.

Specialists

WITH the vast increase in the scope and variety of human knowledge and in the multiplicity of mechanical devices, which has taken place in the past two or three generations, the necessity for specialists in many lines, in order to utilize that

knowledge and those devices to the best advantage, has become apparent.

In medicine, the specialists are so important and so occupy the limelight, that one would almost think that they make up the whole of the profession—if one did not know better.

But there is one field of medical endeavor in which the specialists are now being decried, to a considerable extent, by the men who occupy high places in various professional organizations; that is, the specialists in the manufacture of high-grade medicinal products.

If the wife or child of any physician were suffering from gangrenous appendicitis, would he call in his personal friend, the general practitioner on the next street, who, perhaps, performs six appendectomies in a year, or would he consult a specializing surgeon who performs the same operation six times a day? That question practically answers itself.

If, however, one of his dear ones were the victim of a heart lesion, would he go to his good friend, the druggist on the corner, for a bottle of homemade tincture of digitalis, or would he procure one of the potent and accurately standardized preparations of that drug, produced by a firm which, for years, had been specializing in the manufacture of a few remedies, and whose national reputation depends, like that of the surgeon, upon doing a few things superlatively well? Here the answer is by no means so certain—but it ought to be.

No one, today, expects the druggist to put up pills and compressed tablets extemporaneously. Why should he be expected to compound liquid remedies on the spur of the moment, if there are available highly refined, potent, and specialized preparations of similar compounds?

At the present time, the compounding of prescriptions is a very minor part of the business of the vast majority of druggists; but there will always be some work of this kind for them to do, because there will always be certain combinations of drugs which certain physicians will want to prescribe, but which have not been prepared in a specialistic manner.

Most druggists are honest, but, unfortunately, there are still too many who will substitute inferior drugs in a prescription, in order to increase their profit. While this is true, the wise physician will specify brands of drugs of known purity and power, will check-up on the druggist now and then (in order to guard him against falling into temptation), and will promptly and strictly remove his patronage from any who are guilty of the crime of substitution.

Practically all of the epochal advances in therapeutics during the past few decades have been made in the great, endowed research laboratories, and in similar laboratories maintained and operated, *at their own expense*, by high-class pharmaceutical manufacturers; certainly not by the corner drug stores.

There is a place—and an *important* place — for the general practitioner of medicine and for the local druggist; but the physician who fails to make use of the services of the specialist in surgery or in pharmacology, when these are available, does his patients and himself a grave injustice.

With all the clamor in favor of extemporaneous prescribing, which now seems to be popular, it will be well for the thoughtful physician to keep in mind the immense services which have been rendered to his profession by the reliable pharmaceutical manufacturers, and the specialistic services which they offer him in the treatment of surgical and non-surgical diseases, and to make as wide use as possible of the accurate, powerful, and elegant remedies which are now available.

The best is none too good in the treatment of the sick, and those who have reputations to lose cannot afford to jeopardize them by questionable methods and practices or by failure to provide the best treatment which can be obtained at any particular time and place.

NEXT MONTH

Dr. I. S. Klieger, of New York City, will discuss the use of amino acids in conditions resulting from dietary insufficiency.

Dr. Ellis Powell, of West Monroe, La., will report an astonishing case of what might be classed as "daemoniac possession," in which the "attacks" were brought on by hypoglycemia.

Dr. Marvin J. Blaess, of Detroit, Mich., will set forth the dangers of "reducing cures" containing dinitrophenol.

COMING SOON

"A Symptom Clinic," reported by R. L. Gorrell, B.S., M.D., D.N.B., Clarion, Ia.

"Intransfusible State Following Liver and Venom Therapy," by K. P. A. Taylor, B.S., M.D., F.A.C.S., Puerto Armuelles, Panama.

★ Leading Articles ★

The Medical Specialty of Radiology

By
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THE busy physician in general practice (and all physicians in general practice must keep very busy in order to attain both professional and financial success) is frequently confronted with such questions as these:

1.—How can the x-rays help me to diagnose the physical conditions of the patients who come under my care for treatment for diseases or injuries?

2.—Are x-rays or radium or both beneficial in the treatment of diseases or injuries that come under my care?

3.—If x-rays can assist me in the diagnosis of my patients' conditions, how had I best avail myself of this assistance?

4.—If x-rays or radium or both will be useful in treating my patients, how shall I avail myself of these methods of treatment?

This article is an effort to assist him to answer them to his own best advantage and to the best interests of his patients. Furthermore, the surgeons and the physicians in the various medical specialties, and also, to some extent, the dentists, are often confronted by the above or similar questions, and this article may also be of interest to them.

Radiology is that branch of medical science which deals with the use of radiant energy in the diagnosis and treatment of disease and injury. Because "radiant energy" is manifested in such a great variety of physical forms, the science of radiology covers an extremely broad field. The present conception of radiant energy is that, while the *quality*, or wave-length, of the energy varies greatly, due to the source of origin and the physical materials and conditions which produce any particular type of radiant energy, the *speed* of the different wave-lengths is practically the same as that of visible light (186,000 miles per second, in ordinary atmospheric air). Owing to the greatly different effects produced upon matter by the widely differing forms of radiant energy, the practical application of this energy to medical problems is complicated by deeply involved *physical, mathematical,* and *biologic* problems.

Diagnosis

In the diagnostic use of x-rays, the physician needs to know, not only the *physics* of x-rays and their practical application to the proper fluoroscopic and radiographic procedures, but he must also have a considerable amount of special training and experience before he can correctly interpret the varying densities and overlapping shadows of normal tissues. After becoming proficient in these normal-tissue appearances, as revealed by the x-rays, he next has to learn the abnormal fluoroscopic and film-negative appearances that may be caused by any one, or any combination of two or more, of the pathologic and the traumatic lesions that he will encounter in x-ray diagnostic studies.

Correct x-ray studies are a necessary part of the process of making a complete diagnosis of bone and dental conditions. The various bone fractures and dislocations should always be so studied, and all fractures should be studied in at least two different planes, which should be at right angles to each other. In addition to this, transverse fractures of the humerus and of the femur should always be studied on a film that is large enough to include both ends of those bones, and similar views of the corresponding bone on the opposite side should always be made because, in fractures of the humerus and femur, there may be, and often is, especially in the humerus, considerable *rotation* between the broken fragments, even when the alignment and apposition of these fragments is good. If the bone fragments unite perfectly, but in a considerable degree of rotation, the functional activities of the broken limb may be impaired to an embarrassing degree.

In traumatic injuries involving the elbow, wrist, knee, and ankle joints, and in certain other bone studies, *stereoscopic* films are necessary in order to make an accurate diagnosis. The scope of this paper precludes going into details on certain other points in diagnosing bone conditions, but I do wish to make it clear that a complete and accurate study of bone conditions is by no means a simple, easy procedure, and that the somewhat prevalent notion among the medical profession, that every physician may be able to make his own bone interpretations by having a small x-ray machine of his own, is erroneous.

While the scope of this article does not permit of a discussion of the various bone appearances and bone lesions caused by (1) endocrine glandular disturbances and diseases, such as acromegaly, osteitis fibrosa cystica, and several other diseases less often seen, as well as the increased or retarded bone development in growing individuals; (2) by neoplastic diseases, both benign and malignant; (3) by metabolic and nutritional dysfunctions, such as gout, rachitis, scorbutus, etc.; (4) by the various infections and infectious diseases which, of course, cover a very wide field of bone conditions, including the great variety of bone lesions caused by syphilis; and (5) the associated traumatic lesions that are often complicated by infectious processes, it should be emphasized that x-ray studies are, in general, the most accurate means of determining the presence and extent of all of these conditions. For a more extensive study of the possibilities of roentgen-ray diagnosis, and of the possible errors likely to be made in the x-ray study of bone and certain other conditions, the reader is referred to the excellent article, "Errors In Roentgen Interpretation," read by Dr. Karl Goldhamer before the fifth annual meeting of the Mississippi Valley Medical Society, October 18, 1939.[1]

1.—*Miss. Val. M. J. & Radiol. Rev.*, Jan., 1940, p. 21.

By special technics for each of the various procedures, we are now able to study, with a high degree of accuracy, the various parts and functional activities of the alimentary, biliary, urinary, and the respiratory systems.[2] The heart, nasal accessory sinuses, and the mastoid and petrous portions of the temporal bones can all be studied with a fair degree of accuracy. We are thus enabled to determine the presence and extent of neoplasms and infections, and the results of traumatism of these parts, which include the middle and the internal ear cavities and their bony walls.

While adequate x-ray studies of bone conditions require special training, skill, and care, such studies of the various soft tissue organs of the body as those just mentioned call for a still greater amount of special training and experience. In the studies of the alimentary tract, the observations made by the experienced radiologist or gastro-enterologist, during his fluoroscopic procedures, usually give a larger amount of accurate and reliable information than may be obtained from the films made during the x-ray studies of that patient. However, films should be made, in all such cases, to show, insofar as possible, the actual abnormalities and pathologic or traumatic lesions existing. Such films usually show finer tissue details than may be obtained by fluoroscopic observations, and also form a permanent record of great value.

To study the thymus gland, films made in both the sagittal and lateral planes of the neck-thorax, and in both complete inspiration and complete expiration, give accurate and dependable information as to the *size and form* of the thymus; while the fluoroscopic study of the stomach and pylorus, by means of barium sulphate mixtures taken orally, affords reliable information as to the *functional activity* of the thymus, because pylorospasm is a common accompaniment of hyperthymic function.

Fluoroscopic studies enable us to observe many physiologic and pathologic activities that are not easily demonstrated upon films. Aneurysmal lesions, cardiac arrhythmias, and complete or partial paralysis of the diaphragm may be overlooked unless a fluoroscopic study of the thorax and thoracic organs is a part of our routine chest examinations.

If the physician reading this article is a young practitioner, "just starting out," or an older physician who has no x-ray equipment, the third question asked at the beginning of this article calls for an answer.

If a physician is located in an isolated rural community, he should, if possible, provide himself with diagnostic x-ray equipment. Of course, it will be self-evident that he must, coincidentally, take enough special postgraduate study and training to enable him to be reasonably proficient in making x-ray studies of his patients, and he should do this *before* buying any x-ray equipment. In all such cases, it will be wise for all such physicians to have a working agreement with some competent and experienced radiologist, on a definite, consultation-fee basis, to review and interpret the films on all important cases, and report his opinion *in writing*. Also, in the more difficult diagnostic problems, it will sometimes be best for the radiologist to make a complete x-ray study of that patient and report his diagnostic findings in writing. Such a procedure will not only render the best possible service to the patients, but it may also, at times, prevent, not only errors of diagnosis, etc., but also a possible malpractice suit.

It may be most wise for the physician practicing in the larger towns or cities, where competent radiologic specialists are available, to have an experienced radiologist do all of his x-ray diagnostic work, because he can thus save himself a large amount of overhead expense, as well as a heavy responsibility.

Like automobiles, the "first cost" of an x-ray machine is only a small part of the *total* cost of using and maintaining diagnostic x-ray equipment. To the average physician in general practice, the monthly costs of x-ray films, chemicals, and other expendable supplies, including replacements of x-ray tubes used up, is usually more than his ordinary office rent amounts to.

Therapeutics

As to the second and fourth questions asked, there is a fairly unanimous agreement of the medical profession that, in properly selected cases, x-ray therapy and radium therapy are of great value. However, these highly potent forms of radiant energy should be used therapeutically by only those physicians who have had a complete and well-planned special course of training in therapeutic radiology, and have shown their proficiency in this line of work by successfully passing the full examinations of The American Board of Radiology.

Many of the failures and bad results sometimes observed in both x-ray and radium therapy may be attributed to the improper use of these forms of radiant energy. The indiscriminate sending out of radium, to physicians who have not had the special training and acquired the qualifications mentioned, should be discouraged, because such practices often bring about very undesirable results.

Most physicians in general practice can and probably should use certain forms of radiant energy in their regular work. The *infrared* rays, having a wave-length of from 7,700 to 14,000 A°, and the *ultraviolet* rays, having a wave-length of from 200 to 3,900 A°, are safe and useful forms of radiant energy, which can be obtained from relatively small and inexpensive equipment.

The most efficient infrared rays are those in the region of wave-lengths of 11,000 A°, which are best obtained from the ordinary tungsten-filament lamps of from 300 to 1,500 watts capacity, placed from 40 to 60 cm. from the surface of patient's skin, with a suitable reflecting hood, or reflector, over the bulb or lamp, on the side opposite to the patient. However, the cold-quartz ultraviolet generating equipment is fairly expensive, but, with careful use, it is long-lived; and none of this equipment is expensive to operate.

The grenz rays, having a wave-length of from 2 to 4 A°, have not met with much favor in America and are but little used.

For a more extended discussion of x-ray and radium therapy, the reader is referred to page 247 of the March, 1940, issue of the *Illinois Medical Journal*.[3]

636 Church St.

2.—Brehm, Paul A.: Scope and Methods of Industrial Physical Examinations of the Wisconsin Plan. *J. A. M. A.*, Mar. 16, 1940, p. 985.

3.—Perry, Gentz: X-Ray and Radium Therapy. *Ill. M. J.*, Mar., 1940, p. 247.

The Present Status of Shock Therapy (Insulin and Metrazol) in Mental Diseases*

Part 2

By

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It is not possible to set up a statistical comparison of this material with former methods of treatment. Much material has been published in the past upon the methods of treatment, the prognosis, and the results in these types of cases, but standardization is even less accurate in these conditions than in the schizophrenia types. Palmer and Sherman[14] have made the most comprehensive study of the mental states of middle age in recent years, and they conclude that about 30 percent of this type of cases, treated by methods in vogue before Metrazol was used, can be expected to improve sufficiently to return home, but the expected length of time for recovery is from 6 to 24 months.

We can say very definitely that these patients presented a clinical picture and a history which, in the days before Metrazol therapy, would have forced us to give a hopeless prognosis to every one of them. We selected for this treatment only those cases that had not responded to other forms of treatment. Taking this into consideration, a percentage of 58.8 percent of complete and apparently, at this time, permanent recovery, and 17.6 percent of marked improvement (patients well enough to be at home, but not productive), an over-all percentage of 76.4 percent, in an average length of time of treatment of one-fourth the best expected time for recovery before Metrazol, sums up the great importance of Metrazol therapy in the treatment of the abnormal mental reactions of the middle years of life.

Estrogen Treatment

The advocates of glandular therapy in the treatment of involutional melancholia, chiefly Ault, Werner, and Hoctor,[15] would probably criticize these results by pointing to their own statistics of 92 percent of recovery in the treatment of involutional melancholia by the use of estrogenic substances (theelin).

However, psychiatrists in general have not accepted these results. McNanamy and Trapp[16] reported no improvement in a series of 10 cases of involutional melancholia treated with theelin. Seven (7) of the 9 women in our series had long courses of theelin before Metrazol was given, and showed no improvement from the glandular therapy. Ault, Hoctor, and Werner[15] report that the average length of time spent under treatment in the hospital by their recovered cases was four months, as compared with the hospitalization period in Metrazol series at the Neurological Hospital, of 6.5 weeks.

This report was made on the newer method of using massive doses (30,000 to 40,000 units during the first month). Three (3) of their 14 cases were still in the hospital at the time of their report, and 2 that had been discharged were considered to be only slightly improved. These 5 cases constitute 35.7 percent of the total series and, therefore, it would seem that only 64.3 percent of their cases had improved sufficiently to be discharged with a final note of markedly improved. This is a somewhat different figure than "the apparent recovery rate being 92 percent in our series of cases." The reader is referred to the last article of their series, table No. 1, and the conclusions.

Hawkinson[17] has pointed out that sufficient doses of theelin will bring about a complete recovery in an average of 10 weeks, in those cases where that preparation is going to be effective. Continuation of theelin, when no change appears in the clinical picture, for longer than three or four weeks is futile. This whole subject was reviewed in the presentation[5] mentioned.

Danger of Shock Treatments

Psychiatrists are all agreed that the shock procedures are very severe. For a long time the question was approached from the standpoint of whether or not the treatments were worth the risk. Lately, however, a new feature has been injected into the discussion. An analysis of a series of cases, treated by other methods than shock, reveals the fact that mental disease carries with it an expected mortality of about 5 percent per year. (Gelperin's[11] 5.9 percent at Cincinnati General Hospital, and Ross's[12] 4.6 percent in his control group). Deaths result from exhaustion, suicide, intercurrent infection, severe trauma during mania, and other causes which may attack or affect the socalled normal, healthy man or woman. When we compare this figure of 5 percent with the 1.1 percent of deaths at the New York Hospital, and the 2.1 percent at the Neurological Hospital during Insulin treatments, it would seem that Insulin shock therapy actually *reduces* the expected mortality of schizophrenia, and that, as far as life expectancy is concerned, it is *safer* to give insulin shock than not to give it. This statement is, of course, controversial, but is based upon statistics.

This much can be said without any question: With the advance of knowledge and observed information, the mortality rates have fallen and will continue to fall. Psychiatrists have but to point to experiences of surgeons to confirm this viewpoint, as well as their own experiences in the use of Insulin shock. Early mortality rates ranged from 5 to 10 percent, compared with the present rates of from 1 to 2 percent, in experienced hands. Further advance in the early recognition of dangerous states during the course of treatment; early, proper treatment of these states; and the

*This is the second and last installment of a two-part article.

development of knowledge as to how to treat these potentially fatal complications properly, will reduce the mortality rates even further.

The proper selection of patients will likewise lower these rates. The only death at the Neurological Hospital occurred in the case of a young woman, aged 23, who, on admission, weighed 63 pounds, her normal weight being 130 pounds. In retrospect, we realize that we should have spent more time in building up the patient and preparing her for these treatments. Insulin shock does improve the general metabolism and all patients gain weight rapidly under treatment. She had gained weight (5 pounds) when she went into a protracted state of the convulsive type, with delayed awakening, following the eighth shock, and died three days later. In the light of present knowledge, this death would not have occurred.

Complications of other types have been reported, but they are usually an exaggeration of pre-existing pathologic conditions, such as myocarditis, tuberculosis, nephritis, etc., and can be prevented by proper pre-therapy study.

In summary, we may say for Insulin shock therapy that it is a potentially dangerous procedure, but not nearly so dangerous as popular lay journals have indicated. At this time, when used by experienced clinicians in fully equipped hospitals, with a competently trained medical and nursing staff (it should never be used under any other circumstances), it probably carries a mortality rate approximately the same as that for a simple abdominal surgical procedure, such as an appendectomy.

On the other hand, Metrazol shock, on the surface, seems to be a procedure which any interne ought to be able to give. Metrazol deaths have not been statistically analyzed as yet, and exact percentages cannot be given. Occasional deaths from the procedure, due to a variety of causes, have been reported.

Metrazol treatment is an irreversible procedure. When the injection has been given, there is no known means to counteract it, to correct complications which may develop during the few minutes the reaction lasts, or to aid the patient by any medical means. The situation is entirely out of the clinician's hands. It is necessary, therefore, that every possibility be foreseen in advance, and every precaution taken to control the situation as much as possible. The most vital precaution is a trained team, every member of which knows his part in the general handling of the procedure.

It has been shown very definitely that properly applied control will reduce to a minimum structural fractures and dislocations, the most dreaded complications of this procedure. Polatin and his associates,[18] Hamsa and Bennett,[19] Bennett and Fitzpatrick,[20] Beckenstein,[21] Winkelman,[22] von Meduna and Friedman,[23] and Wespi[24] have all reported on these complications. Hamsa and Bennett recommended pre-therapy spinal anesthesia as a method of lowering the incidence of skeletal complications. The use of spinal anesthesia to prevent trauma to the structural elements of the lower extremities has not as yet become widespread. Other methods are being devised, and with the passage of time the dangers of these complications will be reduced to a minimum.

McAdam[25] and Dick[26] have reported on cardiac accidents during Metrazol treatments. There is no doubt but that Metrazol convulsions put a heavy strain upon the heart. Electrocardiograms should be taken before each course, and at intervals during the course, if the original gram showed any abnormality, or if signs of heart failure develop at any time. With adequate and correct support, Metrazol can be given, even in the face of abnormalities of the heart structure. At the Neurological Hospital we have treated three patients with heart disease, all of whom showed no advance of the heart lesions during the course of treatment.

In summary we may say that Metrazol shock is probably less dangerous than Insulin shock in inexperienced hands, as far as fatalities are concerned, but that, when a final analysis is made, it will be found that experienced clinicians will have fewer fatalities with Insulin than with Metrazol. Complications of a non-fatal type will always be expected in Metrazol therapy, and can be reduced only by experience in the technic and the proper selection of patients, plus the taking of every precaution which experience has shown will minimize the expected complications.

Mechanism of Action

It is impossible to answer the question, "How do these treatments produce their beneficial effects?" at this time. Many theories have been advanced, some to be discarded at once and some to be toyed with as possible keys to the mystery. Several facts are known at this time, and it is probable that the final answer will be found to be a combination of several factors, rather than a single action.

Insulin shock is a profound metabolic stimulator. Almost all patients gain weight and experience a profound improvement in subjective feeling tone. Patients sometimes gain weight while taking Metrazol, but only those who are showing clinical improvement in other aspects of their whole picture and, therefore, it is probable that the weight gain is the result of general improvement, rather than from metabolic stimulation. In both treatments the patients are stimulated and "shaken up." It is not unusual to find patients, who have had malignant insomnia for weeks, start to sleep well, without sedation, after the first or second Metrazol shock. The basic physiologic processes are always profoundly disturbed in all mental patients, and there is no doubt that both treatments aid in readjusting these processes, and through this effect help the patient.

It must always be kept in mind that, at certain stages of the treatments, these patients are highly susceptible to suggestion. This seems especially true during the minutes when the patient is returning to consciousness and awareness of his surroundings. During this period, properly applied psychotherapy is of tremendous value in increasing the effectiveness of both treatments, but especially of Metrazol. The psychotherapeutic aspect of treatment cannot be overlooked, and it is probable that much of the difference in statistics between public and private hospitals is due to the fact that private hospitals, with their more cheerful surroundings and their highly-trained, high-percapita staffs, can apply psychotherapy much more efficiently than the public or state hospitals.

It has been known for years that profound emotional and physical shock may favorably influence the course of a mental disease. During the course of these treatments the patients are profoundly

"shocked," using the term in a non-therapeutic sense, and this may have some influence on the improvement shown by patients under this treatment.

Prefrontal lobotomy for the treatment of mental patients taught us one thing. Certain types were benefited by severance of connecting fibers and the diminution of the number of active centers of certain areas of the brain.[27] It is possible that both these treatments, which produce profound states of cerebral ametabolism, likewise irreversibly destroy an undetermined number of brain cells. If this is true, then some of the benefits may come from this factor.

There are many other possibilities, some psychotherapeutic in character, some physical or physiologic in nature, but at this time no exact or complete answer can be given to the question of how the beneficial effects result from or by these treatments.

Conclusions

It is possible to conclude, from experience, published papers, statistical reports, and personal discussions between psychiatrists that:

1.—Insulin shock is indicated in all types of schizophrenia, with the exception that, in those cases with a profound depression content of their clinical picture, Metrazol should be used in conjunction with it.

2.—Metrazol should be used in the treatment of the affective psychoses (chiefly the manic-depressive group), and is especially effective in the age group over 40, usually diagnosed involutional melancholia, agitative-depressive psychosis, and the pre-senile dementias which do not show profound arteriosclerotic damage to the cerebral nerve cells.

3.—Insulin increases the expected rate of remission and marked improvement from 14.7 percent to 37.6 percent, in state hospital work, and from an undetermined figure to 56.5 percent in private hospital work. State hospitals have a one-year follow-up of 29.5 percent, while private hospitals have a six-months' follow-up of 56.5 percent complete remissions or marked improvement, with Insulin-treated schizophrenics. It appears that, under Metrazol treatment, results in the treatment of schizophrenia are about equal to the remission rates of pre-shock days, and that its use alone, in the treatment of schizophrenia, should be discontinued.

4.—Metrazol has its greatest value in the affective psychoses, and in the treatment of these conditions it is invaluable. The greatest value of both treatments (and this point cannot be successfully refuted) is in the length of time for hospitalization of shock-treated patients, as compared to non-shock treated cases (1.7 months, compared with 7.7 months, in schizophrenia; 1.5 months, as compared with from 4 to 24 months, in the older patients). The permanence of these results cannot as yet be determined, but the outlook is favorable that many properly-treated cases will remain permanently well.

5.—From the standpoint of loss of life alone, it is safer to give shock therapy than not to give it (5 percent mortality in non-shock treated cases, as compared with a little more than 1 percent in shock-treated cases). Other complications do occur, but their incidence is no contraindication to the treatments, when results as a whole are considered. These treatments must be considered in the same light as major surgical procedures, and the risks and results must be analyzed in the same way.

6.—No definite, exact, or complete statement can be made at this time as to the channels by which these treatments act in producing their beneficial effects. It is probable that they act through several, rather than through a single one.

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Mechanical Aids in Treating Inhalant Allergies

By
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EVERYONE who treats patients with hay fever, rose fever, seasonal asthma, and other inhalant allergies has been impressed with the spectacular relief obtained by these patients when the offending allergens are eliminated. It is a relatively easy matter to remove the cat, dog, or other family pet which causes trouble from the environment, but it is much more difficult to remove pollens, molds, and dust particles from the air inhaled, so when

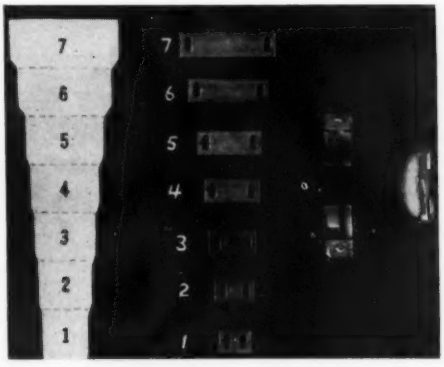

Fig. 1: Biederman Adjustable Nasal Filter.

these are the offenders, hyposensitizing injections are given.

There are, however, various mechanical devices that are used to filter these particles from the air, and rooms equipped with air-filtering machines give relief to the allergic patients as long as they remain in the room, but the symptoms return when they leave the room.

The Allergy Electric Mask* filters pollens, molds, and dust particles from the air inhaled and gives relief to the patients as long as it is worn. This mask has been found very helpful in giving relief to patients while they are about the house and yard, while driving their automobiles, and at work; but not all patients will appear in public places wearing the mask, because some are embarrassed by its conspicuity.

A nasal filter constructed with a yoke extending outside the nostrils is also embarrassing to the wearer. Moreover, since the nostril openings vary in size, nasal filters should be so constructed as to be able to fit perfectly into nostrils of any size. Again, some individuals have asymmetric nostrils, and therefore an effective nasal filter should be adjustable to each individual nostril, to insure a perfect fit.

An ideal mechanical aid to patients with inhalant allergies is one which is effective, portable, and at the same time completely invisible.

The object of this paper is to describe a new device, which I have developed and used successfully in the treatment of the inhalant allergies, as well as inflammations of the respiratory tract. This device is effective, portable, and completely invisible.

A perforated and graduated card, with sections numbered from 1 to 7, is used to measure the size of the nostril. When the size of the nostril has been measured and found to be, for example, size 6, the filters are adjusted with *bar* number 6, and are then ready for use.

Fig. 1 shows, from left to right, the perforated card numbered from 1 to 7; the corresponding bars, marked from 1 to 7; the two ends of the filter into which the proper bar is placed; and, at the extreme right, the adjusted filter ready for use.

Any proper action of a device fitting into the nostrils depends upon the patients' breathing with the lips closed, for otherwise allergens will enter through the mouth, and thus pass into the respiratory tract. To overcome symptoms due to particles which have gained entrance into the respiratory tract before the patient has had a chance to wear the filters, and in order to overcome symptoms due to the passage of pollens through the open mouth when the patient forgets to keep his mouth closed, a volatile medicament is used on the filter pad. This fluid is composed of camphor, menthol, oil of eucalyptus, oil of peppermint, oil of pine needles, and alcohol.

The filter pads saturated with these volatile medicaments not only give relief from symptoms of hay fever, but also are soothing in inflammations of the respiratory tract due to a common cold, sinus infection, pharyngitis, laryngitis, and bronchitis. The duration of the "cold" is definitely shortened by the use of these volatile medicaments on the filter pad, but these substances last only a few hours, and therefore the filter pad must be again saturated when necessary.

Since most people cannot remember to keep their lips closed when sleeping, and do not like to be awakened by symptoms reminding them to place more drops on the filter pad, I have been advising my patients to wear the Allergy Electric Mask while sleeping, driving, and when about the home; and to wear the nasal filter on the street, at work, at social functions, or, in fact, anywhere and at any time except when asleep.

Using the present accepted methods of treating the inhalant allergies by means of a careful his-

*Biederman, Joseph B.: *Journ. of Med.*, June, 1937.

tory, physical examination, and a series of skin tests, we can give satisfactory relief to about 90 percent of these patients, but about 10 percent receive no satisfactory relief.

Fifty (50) patients, who failed to obtain relief, in previous years, by the usual method of hyposensitization treatment, were told to use the Allergy Electric Mask during the night and the new nasal filter during waking hours. It was found that 92 percent of these patients obtained satisfactory relief from the mechanical aids.

Fifty (50) patients, who had failed to obtain relief from hyposensitization treatments alone, had mechanical aids *added* to their treatment during the seasons of their symptoms. All of the patients in this group were dissatisfied with the relief they obtained from desensitization alone, but became satisfied with the relief obtained after the mechanical aids were added to their hyposensitization injections.

It is possible that many of the individuals not responding to hyposensitization treatments are sensitive to inhalants not used in present-day hyposensitization treatments. Perhaps they are sensitive to various fruit molds, in addition to pollen and the common *Alternaria* and *Hormodendron* molds, and by filtering out *all* of the particles from the air inhaled, they obtain relief.

This new mechanical aid, having been found decidedly valuable in the treatment of inhalant allergies and in inflammations of the respiratory tract, should be added to the physician's therapeutic armamentarium.

Union Central Bldg.

The Oral Use of Colloidal Iodized Sulphur in Arthritis

By

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At the present time a specific etiology for rheumatoid and osteo-arthritis has not been definitely established. Among the various causative factors, there have been mentioned foci of infection (teeth, gallbladder, prostate, cervix), impaired carbohydrate metabolism, uric acid diathesis, and vitamin deficiency.

Many cases of arthritis may be due to a deficiency of available sulphur and imbalance of sulphur metabolism. Sulphur aids in the absorption of toxic products and their subsequent elimination from the body by way of the excretory organs.

Roentgenologic studies do not always demonstrate the proliferation and lipping of bone; frequently there are no x-ray findings whatsoever. Occasionally slight rarefaction occurs, with decreased density of bone, due to faulty absorption of calcium and subsequent impairment of the laying down of normal osseous tissue. This latter finding is frequently associated with deficiency of available sulphur.

One of the important waste matters found in the feces and urine is indican. With the aid of the liver function, a nitrogenous waste product, indoxyl, results. However, when no available sulphur is present, an intermediate product called indol is secreted. When indol is found in a large quantity in the excreta, one can be positive that the sulphur metabolism is at fault.

Cawadias[1] suggests that sulphur plays an important part in the processes of nutrition, particularly that of the joints. Loeper and his associates[2] have observed that the neutral sulphur of the joint cartilage in rheumatoid arthritis was reduced about one-third below normal, and also that the glutathione in the blood was below normal, while there was an increase in the urinary output of unoxidized sulphur.

Schlesinger and Hopkins believe that glutathione is present in all the cells and plays a significant part in the oxidation and reduction of the body tissues, and therefore also functions as a detoxicant.

Pemberton[3] concludes that there is a state of deficient oxidation of the tissues in the arthritic individual because of impaired circulation in the joints, resulting in malnutrition.

Sullivan and Hess[4] studied a great number of arthritic patients, and found that scrapings of the nails showed a low cystine content.

We therefore conclude that, in cases of arthritis where there is excretion of toxic substances and at the same time a deficiency of sulphur in the nails or bones, there must be an imbalance of the sulphur metabolism.

Dr. Woldenberg,[5, 6] of the Veterans' Administration, treated hundreds of cases of rheumatoid arthritis with colloidal sulphur, given intravenously and intramuscularly, with marked beneficial results.

Dr. Rawls and his colleagues[7] treated 200 patients with arthritis of different types by the twice-weekly intravenous and intramuscular administration of aqueous colloidal sulphur, 10 milligrams per cc. However, much larger doses (10 to 30 milligrams twice weekly) of colloidal sulphur are well tolerated. The cystine content of the fingernails of the patients, when below normal at the commencement of treatment, usually was increased to normal after a course of sulphur therapy.

Since a large number of physicians have utilized colloidal sulphur parenterally in the treatment of arthritis, with gratifying results, it was decided to investigate a preparation of colloidal iodized sulphur which, when taken internally, could supply the deficiency of sulphur, and at the same time could normalize the imbalance of sulphur metabolism.

The preparation I have used is a very fine suspension of sulphur particles, which are so finely dispersed as to be almost completely absorbable

through the mucous membrane of the intestinal tract. As a result, the sulphur becomes therapeutically available, and its action in the body is catalytic. This preparation is known as Colloidal Iodized Sulphur*, and contains 10 milligrams of colloidal sulphur and 5 milligrams of colloidal

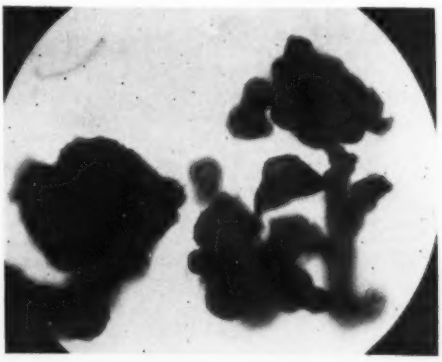

Fig. 1: Photomicrograph of Inorganic Crystalloid Sulfur, showing coarse particles.

iodide, 50 percent of which consists of iodine itself, suspended in 2½ minims (0.16 cc.) of olive oil, and encapsulated in a soft, gelatin capsule, which is soluble in the contents of the stomach. The colloidal sulphur and iodide are dispersed in a carbohydrate base, which aids in the stability and subsequent absorption of the compound. The suggested dose is two capsules after each meal for the first few days, and then one capsule after each meal for a minimal period of thirty days.

The use of iron cacodylate, vitamins, and salicylates may be indicated, in conjunction with the iodized sulphur, to increase the hemoglobin content of the blood and to relieve pain until the sulphur metabolism is returned to normal.

I have under observation a series of 10 patients in private practice, who have been using the colloidal iodized sulphur with beneficial results. Eight (8) of the patients experienced marked relief from local symptoms and a sense of constitutional well-being, including improved appetite, a decrease in fatigue, and a slight gain in weight, in undernourished individuals.

In the two patients who did not respond within a short period to the colloidal iodized sulphur therapy, the duration of the arthritis was more than five years. The history and treatment of four typical patients are briefly described below:

Case Reports

Case 1:—H. B., a man, 74 years of age, complained of continuous pain for six months in the right knee, which was swollen, tender, and of the osteo-rheumatoid type. He had been treated with diathermy and other physical measures. His blood pressure was 170/100; heart, negative; the urine revealed a slight amount of albumin, hyaline casts, and a small amount of pus: hemoglobin, 80 percent; red blood cells, 4,400,000; tonsils, slightly enlarged; teeth, gallbladder, and prostate, negative for foci of infection.

*C-I-S Kaps, furnished by Jameo & Co.

The swelling and disability disappeared after four months of treatment.

Case 2:—H. S., a widow, 48 years of age, furrier, complained of pain in the sacro-iliac region, radiating down the left thigh and leg, for the past three years. She had been treated with physical therapy, local inunctions, and salicylates by the mouth, with short periods of relief. The x-ray examination revealed moderate lipping of the left side of the lower third-lumbar and sacro-lumbar regions.

This woman weighed about 180 pounds and had a history of a gallbladder disturbance. Her blood pressure was 140/86; heart, negative; there was no evidence of foci of infection. Urine analysis showed an occasional pus cell; hemoglobin, 70 percent; red blood cells, 4,200,000.

This patient was given colloidal iodized sulphur by mouth, and iron cacodylate and vitamin B intravenously. Her pain and disability disappeared after ten weeks of treatment.

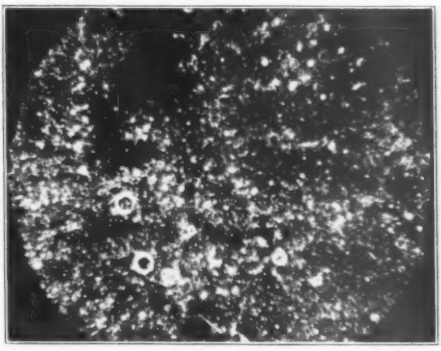

Fig. 2: Photomicrograph of Colloidal Sulfur, showing fine particles.

Case 3:—L. F., a married woman, 27 years of age, social service worker, complained of pain in the right wrist, of two weeks duration, and gave a history of previous poly-articular arthritic attacks. There was no evidence of foci of infection, except for pyorrhea of the lower gums, involving two incisor teeth, which did not reveal any pus in the alveolar sacs. Her blood pressure was 122/80; heart sounds, somewhat muffled; hemoglobin, 80 percent; red blood cells, 4,200,000.

This patient was given colloidal iodized sulphur by mouth, with marked improvement and entire clearing up of her symptoms and disability within four weeks.

Case 4:—W. C., a man, 32 years of age, complaining of acute pain in the left sacro-iliac region and the left heel, during about four weeks and becoming progressively worse. Due to the intense pain, it was deemed advisable to inject the sacro-iliac region with Eucupin in Oil, in order to relieve the pain.

Examination revealed decreased mobility of the sacro-lumbar part of the spine, which was acutely tender to palpation. The pain over the left calcaneus was severe, and became intensified upon passive motion. There were no foci of infection, although there was a history of recurrent attacks of gonorrhea. His blood pressure was 130/90; heart, negative; the urine revealed occasional shreds and pus cells.

This patient was given colloidal iodized sulphur by mouth, and two intramuscular injections of colloidal sulphur, 30 milligrams each, during the first four days, and showed excellent improvement.

The next case did not react favorably to this treatment.

Case 5:—Mrs. H. D., a woman, 74 years old, complained of pain in the fingers, sacro-iliac region, and the right hip, thigh, and foot. She gave a history of an arthritic condition which was progressively becoming worse. The phalangeal joints were becoming enlarged and Heberden's nodes were noted in the finger joints. X-Ray studies of the spine revealed marked lipping of the lumbar vertebrae and slight rarefaction of the iliac crests. Her blood pressure was 190/100, and her heart was enlarged to the left, the sounds being rapid and weak. *Urinalysis* revealed two-plus albumin and the presence of pus, epithelial cells, and hyaline casts. Her hemoglobin was 65 percent, and red blood cells 3,800,000. She stated that she had received all kinds of treatment, including physical therapy, salicylates, local inunctions, short-wave diathermy, and typhoid vaccine injections, without any noticeable change in her condition.

The judicious use of colloidal iodized sulphur for twelve weeks brought no immediate relief, as far as symptoms and disability were concerned, and subsequently she refused to continue with the medication.

She definitely had a hypertrophic osteo-arthritis, which was chronic in duration, and therefore no type of medication would be apt to produce any striking results.

The four cases which are typical of those that have been benefited after being under treatment for from six to twelve weeks, have now been under observation for six months, and no recurrence of pain or disability has been noticed. It is advisable to continue the colloidal iodized sulphur therapy for several months, until the patient's general physical condition has been restored to normal.

I have noticed, after treating a number of patients afflicted with rheumatoid and osteo-arthritic conditions, that there usually is a history of constipation and fatigue, and also a slight secondary anemia.

For various reasons, the cystine content of the nails and the blood sedimentation rate were not tested, as I believe that it would have been difficult to follow these patients thoroughly by laboratory procedures. However, several of the patients who originally showed brittleness of nails, roughened skin of the face, and dry hair, showed an improvement of these abnormalities.

In my series of 10 cases, 80 percent of the patients were benefited to such an extent that there was a complete return of mobility of the affected part and a reduction of the swelling and pain.

Dr. Edward Podolsky[8] writes that, after treating 25 cases of various types of arthritis, by means of colloidal iodized sulphur, given by mouth, improvement was noted in every case. There was a decrease in the amount of swelling at the joints, when swelling was present; a decrease in the amount and severity of the pain; and an increase in the amount and extent of motion of the affected parts.

The specific action of colloidal sulphur in the treatment of arthritis is not definitely known. However, from my experience, I conjecture that where there is a deficiency of sulphur or an imbalance of the sulphur metabolism, this therapeutic agent supplies the deficient sulphur. It also acts as an intestinal antiseptic and as a general metabolic stimulant. The colloidal iodide acts as a synergist of the colloidal sulphur, and also exerts a therapeutic function as an alterative and detoxicant.

Physicians must realize that the action of any colloidal therapeutic agent will be markedly increased in direct proportion to the smallness of the colloid particles and the amount of brownian movement present. Observation of the original colloidal sulphur used in this preparation, after a period of six months, shows an active brownian movement and the size of the particles ranging from 0.8 of a micron to a smaller diameter. The accompanying photomicrographs show the differences between colloidal and inorganic crystalloid sulphur.

Conclusions

1.—Colloidal Iodized Sulphur, given by mouth, has been efficacious in removing or decreasing the disability and pain which attend rheumatoid osteo-arthritic conditions in 80 percent of cases studied by me. There were no constitutional reactions, and generally any constitutional deficiencies were improved.

2.—Colloidal Iodized Sulphur is of benefit to arthritic patients who have a deficiency in cystine in the body or an imbalance in the sulphur metabolism.

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505 West End Ave.

THE MOTE AND THE BEAM

Ever turn away your gaze from the imperfection of your neighbor and center rather your attention upon your own shortcomings, in order to correct them and become wiser. Show not the disparity between claim and action in another man, but rather help him in his arduous walk in life.—LETTER OF A MASTER.

Endocrine Activation of Opsonic Responses

By
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THE value of pancreas therapy in digestive disorders is well established, but combined clinical and laboratory investigations point out certain immunologic responses which are less clearly defined. It has been observed that a measurable increase in the formation of specific immune bodies may be seen following the intramuscular administration of pancreas tissue extract.

In previous studies it was found that the addition of pancreatic enzymes to bacteriophage increased the activity of the bacteriolytic process, in some cases to a remarkable degree. Specimens of phage with the addition of pancreas tissue extract showed no loss of lytic effect after two months. On the other hand, when pancreas was added to a bacterial culture in bouillon, simultaneously with the addition of a titered streptococcus-phage which had a demonstrable slow lytic effect, complete lysis was produced in five hours. The culture in question was a particularly hard-to-lyse strain of streptococci, and it seems probable that the effect may be attributed to the addition of the extract.

Further tests with the same culture seemed to show that the action observed from adding the pancreas tissue extract was due, at least partially, to direct participation of the extract with the phage in the process of bacteriolysis. Not only that, but other investigations indicated that large amounts of bacteriophage, given by mouth, would apparently stimulate the pancreas itself, for the stools would invariably show an increased amount of pancreatic enzymes.

Undoubtedly the addition of pancreas to phage was beneficial, having been confirmed by clinical tests; but was the benefit due to a direct bacteriolytic action of the pancreas tissue extract, or did its administration change the tissue reaction of the immune-body complex?

Experimental Procedure

In studying the mechanism of the action of pancreas tissue extract in stimulating antibacterial activity, it was decided to determine its influence upon phagocytosis. If the extract itself has a phagocytogenic action, then it could be used clinically as a non-specific antigen. To prove this, a modification of the original Wright technic was used. One volume of the patient's blood, plus one volume of 1-percent sodium citrate, plus one volume of a bacterial suspension in saline, derived from a 24-hour agar culture of virulent staphylococci, was thoroughly mixed in a 5-cc. ampule. The ampule was shaken well, but not roughly, for five minutes, then sealed and put in the incubator for thirty minutes. The utmost care was taken to preserve the virulence of the organisms by means of animal passage. Slides were prepared and stained and the average number of bacteria phagocytized by each leukocyte was derived from a study of fifty cells.

In determining the opsonic index, the enumeration of the average number of bacteria per leukocyte is liable to certain errors. Simon demonstrated that the percentage of all leukocytes containing any bacteria should be taken into consideration. However, we were interested, not so much in estimating the true opsonic index as in measuring the increased phagocytic power. A change in the average count per cell, taken for fifty cells, would certainly indicate this. However, the average number of bacteria per cell must be related to the total number of phagocytes. One must take into consideration the factor of leukocytosis due to the infection, with its resultant higher percentage of young leukocytes, which are known to possess relatively higher phagocytic power, apparently on account of their age alone.

In order to determine the increase of opsonins in the blood due to the addition of pancreas tissue extract to the phage, a corrective factor must be added to take care of the increased number of leukocytes, particularly young ones. This was done in some cases but, in general, credit was given to the pancreas extract whenever there was an increase in phagocytic activity, even if not all the increase could be attributed to the increased opsonins, but rather to stimulation of the blood-cells' defensive system itself.

For a control, it was observed that, by mixing 1 cc. of the patient's blood with 1 cc. of 1-percent solution of citrate and 1 cc. of bacterial suspension, the phagocytic index was 7. On the other hand, 1 cc. of the same blood, with 0.5 cc. of 2-percent sodium citrate solution, 0.5 cc. of pancreas tissue extract*, and 1 cc. of bacterial suspension, the phagocytic index was 8. This was repeated with different blood samples, and the figures represent the average result. These studies showed that, on the whole, pancreas tissue extract definitely assists phagocytosis.

Clinical and Experimental Observations

One of the first clinical tests was in a patient suffering from two large boils. The treatment consisted of wet dressings of phage applied to one boil, and dressings of phage plus pancreas tissue extract applied to the other. There was a visibly enhanced action of the phage to which the pancreas was added.

Another case presented a stubborn *Staphylococcus albus* skin infection. Many injections of phage had not been entirely successful; but the addition of 15 minims of pancreas tissue extract to 10 minims of phage cleared the infection in four injections, and there was no recurrence.

An examination of a patient with *Streptococcus viridans* septicemia showed that blood cultures were still positive and the patient was very septic, in spite of intensive sulfanilamide therapy and blood transfusions. Autogenous streptococcus phage was administered intravenously, and the results were

*The preparation used is known as Panocrin-C (Harrower).

TABLE I.

CASE	ORIGINAL BLOOD COUNT			THERAPY	BLOOD COUNT			% INCREASE PHAG. POWER	THERAPY	BLOOD COUNT			% INCREASE PHAG. POWER	THERAPY	BLOOD COUNT			TOT. % INCREASE PHAG. POWER
	Leuk.	% Polys	Phag. Power		Leuk.	% Polys	Phag. Power			Leuk.	% Polys	Phag. Power			Leuk.	% Polys	Phag. Power	
1. Chronic Staph. Aureus Infection	8,500	68	5	Autog. Vac. 2,4,6 & 4 of 10 min. each	9,800	72	12	140	Autog. Vac. 3 of 10 min. Pancreas Ex. 3 of 1 cc.	9,800	72	21	320	Autog. Vac. 3 of 10 min. Pancreas Ex. 3 of 1 cc.	9,800	71	29	480
2. Chronic Acne				Staph. Acne Vac. 2,4,6 & 15 of 10 min. each	7,800	61	17		Staph. Acne Vac. 8 of 10 min. ea. Pancreas Ex. 8 of 1 cc.	10,300	69	41	141					141
3. Diphtheroid G.U. Infection	11,300	72	3	Autog. Vac. 2,4,6 & 15 of 10 min.	11,900	74	7	133	Autog. Vac. 5 of 10 min. Pancreas Ex. 5 of 1 cc.	12,100	72	19	653					633
4. Staph. Albus Cystitis	6,300	57	9	Pancreas Ex. 5 of 1 cc. each	7,200	62	11	22	Autog. Vac. 8 of 5 min. each	7,200	64	22	144	Pancreas Ex. 4 of 15 min. Autog. Vac. 4 of 5 min.	7,500	63	40	344
5. Furunculosis	8,100	51	6	Heterog. Lipoprot. 8 of 1 cc.	8,200	66	11	83	Heterog. Lipoprot. 8 of 1cc. Pancreas Ex. 8 of 15 min.	10,300	68	16	166	Autog. Vac. 2,4,6 min.	10,200	65	27	350
6. Streptococcus Throat Infection	11,300	71	3	Heterog. Lipoprot. 2 of 2 cc.	13,600	74	5	66	Heterog. Lipoprot. 2 of 2 cc. Pancreas Ex. 2 of 1 cc.	16,600	76	10	233					233
7. Pneumococcus Hand Infection	6,200	74	8	Heterog. Lipoprot. 2 of 2 cc. Pancreas Ex. 2 of 1 cc.	10,300	76	14	75	Heterog. Lipoprot. 2 of 2 cc.	12,100	79	16	100	Heterog. Lipoprot. 2 of 2 cc. Pancreas Ex. 2 of 1 cc.	10,400	70	21	163

interesting, in that the bacterial count dropped from an average of 100 colonies per cc. of blood culture to only a very few colonies. Two negative cultures were obtained, but the bacterial count eventually increased and the patient died.

Another patient with a *Streptococcus viridans* septicemia was examined and, after consultation with a group of physicians, no encouragement was given regarding the prognosis. The consensus was that bacteriophage might be tried, but that curative results were not to be expected. With the patient's temperature varying from 101° to 104° F., it was decided to try phage intravenously. The possibility of combining pancreas extract with the phage was considered, and, in view of the hopeless prognosis, both the physician in charge and the family desired an immediate trial of the combination therapy. Fifteen (15) minims were given intravenously, while the temperature was close to a peak (103.6°). In the next hour and a half, the temperature rose to 104.5°. The next morning a chill developed and the temperature dropped to 98.7°. After three more injections, the blood culture was negative and has remained so, with complete recovery. Probably this unusual result was attributable mainly to the phage, but it is possible that the pancreas extract contributed powerfully to the bacteriolytic action.

To give a better understanding of the results observed, a number of actual cases may be described.

Case Reports

Case 1.—Chronic Staphylococcus aureus infection, with intermittent acute exacerbations. At the beginning of treatment the blood picture was: leukocytes, 8,500; polys, 68 percent; phagocytic power, 5. Seven injections of autogenous vaccine raised the leukocytes to 9,800, the percentage of polys to 72, and the phagocytic power to 12—an increase of 140 percent.

Then three injections of autogenous vaccine plus pancreas tissue extract were given. The leukocytes remained practically unchanged, but the phagocytic power rose to 21—an increase of 320 percent. Three more injections of vaccine plus pancreas were given, and the final blood picture showed: leukocytes, 9,800; polys, 71 percent; phagocytic power, 29. The total increase in phagocytic power in this case was 480 percent.

Case 2.—Chronic acne. The patient was referred to me after having received eighteen injections of staphylococcus-acne vaccine. We found: leukocytes, 7,800; polys, 61 percent; phagocytic power, 17.

The patient was then given eight injections of autogenous vaccine plus pancreas tissue extract, following which I found: leukocytes, 10,300; polys, 69 percent; phagocytic power, 41.

We have here a total increase in opsonic power of 141 percent, and it is possible, in this case, to credit 45 percent to increased stimulation of the defense cell mechanism, and 96 percent to increased opsonins.

Case 3.—Diphtheroid urinary-tract infection. The first examination showed: leukocytes, 11,300; polys, 72 percent; phagocytic power, 3.

Eighteen injections of autogenous vaccine were given, and we then found: leukocytes, 11,900; polys, 74 percent; phagocytic power, 7—an increase of 133 percent. We then gave five more injections of vaccine, plus 1 cc. of pancreas tissue extract, and the picture changed to: leukocytes, 12,100; polys, 72 percent; phagocytic power, 19. In this case the pancreas tissue extract apparently aided very greatly in increasing the phagocytic index.

Case 4.—Staphylococcus albus cystitis infection. When the patient was first referred, the leukocyte count was 6,300; polys, 57 percent; phagocytic power, 9.

The patient received five injections of pancreas tissue extract alone, and we found: leukocytes, 7,200; polys, 62 percent; phagocytic power, 11. Obviously the pancreas tissue extract stimulated the defensive cell mechanism to some degree and the rise in phagocytic power appears to be due to this action. The opsonins, however, did not seem to be increased.

The patient was then given three injections of autogenous vaccine and we found: leukocytes, 7,400; polys, 64 percent; phagocytic power, 18. An increase in phagocytic power was in evidence without the use of pancreas tissue extract at this time, but that had been given previously.

Five more injections of vaccine alone were given and the picture was changed to: leukocytes, 7,200; polys, 64 percent; phagocytic power, 22. The phagocytic power was increased very little, so four more injections of vaccine plus pancreas tissue extract were given, and we found: leukocytes, 7,500; polys, 63 percent; phagocytic power, 40.

A very pronounced increase (nearly 100 percent) in phagocytic power is noted, which undoubtedly is attributable to the influence of the pancreas extract. Many other cases showed similar results, and it may be stated that, in every case studied, the addition of pancreas extract definitely increased the phagocytic power.

Heterophylic Lipo-Protein

Knowing that non-specific therapy is of definite value when properly indicated, it was of interest to study similarly a few cases, using a heterogenetic lipo-protein*. Although it is believed that autogenous protein medication is more effective, particularly with certain bacteria, there is evidence that, in other types of infection, an agent of this kind may be superior. Also, with autogenous therapy, there is inevitably a period of delay, while waiting for the cultures and vaccines to be developed, and during this period nonspecific therapy is valuable, as it has the advantage of being available for immediate use.

Case 1.—Furunculosis. The blood findings were: leukocytes, 5,100; polys, 51 percent; phagocytic power, 6. Eight injections of heterogenetic lipo-protein were given, with the following result: leukocytes, 8,200; polys, 66 percent; phagocytic power, 11. The stimulation of the defensive cell mechanism was quite remarkable and the increase in phagocytic power was undoubtedly due to the increase in young cells.

Eight more injections of this same agent, plus pancreas tissue extract, were given, and the picture was changed to: leukocytes, 10,300; polys, 68 percent; phagocytic power, 16. There was still an increase in the number of defensive cells, but the increase in phagocytic power was only partly accounted for by the increase in the number of leukocytes. The opsonins were also moderately increased.

Three injections of a vaccine made from the patient's culture were given, after having been made virulent by animal passage. We then found: leukocytes, 10,200; polys, 65 percent; phagocytic power, 27. There was now a much more pronounced increase in phagocytic power, even though the defensive cell mechanism was apparently not stimulated.

Case 2.—Severe *streptococcic throat infection.* The original blood study showed: leukocytes, 11,300; polys, 71 percent; phagocytic power, 3. Two injections of heterogenetic lipo-protein were given, twelve hours apart. We then found: leukocytes, 13,600; polys, 74 percent; phagocytic power, 5.

Two more injections of the heterogenetic lipo-protein, plus pancreas tissue extract, changed this to: leukocytes, 16,600; polys, 76 percent; phagocytic power, 10. In this case the increase in phagocytic power was more pronounced than when the heterogenetic lipo-protein was used alone, for then the increase in phagocytic power was chiefly due to an increase in the number of leukocytes.

Case 3.—Pneumococcus hand infection. The first findings were: leukocytes, 6,200; polys, 74 percent; phagocytic power, 8. Two injections of heterogenetic lipo-protein, plus pancreas tissue extract, were given. We then found: leukocytes, 10,300; polys, 76 percent; phagocytic power, 14.

Two further injections of heterogenetic lipo-protein without pancreas were given, and the blood picture changed to: leukocytes, 12,100; polys, 79 percent; phagocytic power, 16. At this point the infection was greatly improved clinically. All injections were given twelve hours apart. Increase in phagocytic power was due chiefly to the increase in young leukocytes.

Two more injections of heterogenetic lipo-protein with pancreas tissue extract were given and we then found: leukocytes, 14,300; polys, 81 percent; phagocytic power, 20. The clinical condition was improved and the count two days later was: leukocytes, 10,400; polys, 70 percent; phagocytic power, 21.

Many other cases could be cited, but these will suffice to indicate the nature and scope of these investigations. Evidence has been accumulated to support the assumption that pancreas extract has definite bacteriolytic value. At one time it was thought that the pancreas might be instrumental in the digestion of the phage itself, but this fear seems to be quite groundless, for both phage and pancreatic enzymes are found together in the intestinal tract.

Discussion

It is obvious that the phagocytic power of the blood is increased materially by the parenteral use of pancreas extract. Employing established clinical tests, other workers have demonstrated conclusively that the serum-enzyme content of the blood is increased by pancreas therapy. Recent experimental work (Menkin, V.: *Jour. Exper. Med.*, Jan., 1938, lxvii, p. 153) has shown that blood serum, digested by trypsin, yields split products which, when injected into the skin, will rapidly increase the permeability of small cutaneous vessels, and is followed by a local migration of polymorphonuclear leukocytes.

*The preparation used is known as Heteril (Harrower).

The tryptic digest of blood-serum, when purified, results in a crystalline substance which alters capillary permeability and favors the local migration of cells in a similar manner as leukotoxin, a substance that plays an important part in the mechanism of inflammation, by its ability to induce and increase capillary filtration.

Thus, by deduction, it seems rational to suggest that the increased opsonic power of the blood, in patients treated with pancreas extract, may be due to the unusual amount of trypsin in the blood (induced by the pancreas therapy), which, in turn, stimulates the migration of active polymorphonuclears. Other mechanisms may be involved, but the one suggested is supported by sound evidence and may provide an explanation for many of the phenomena recorded in this report.

Conclusions

1.—Insulin-free pancreas extract, when used parenterally in combination with bacteriophage therapy, greatly improves the lytic power of the phage.

2.—In autogenous vaccine therapy, the addition of pancreas extract, given intramuscularly, increases phagocytic activity. This is due mainly to a rise in phagocytic power, and partly to stimulation of leukocytosis.

3.—Heterogenetic lipo-protein therapy is of great value in raising the defensive-cell system to greater efforts, but does not increase the opsonins materially. When pancreas extract is added, however, there is some rise in the opsonic power of the blood as well.

From my observations, I feel justified in recommending the addition of pancreas extract to all therapy with bacteriophage, autogenous vaccine, and non-specific protein, in properly selected cases.

4036 Wilshire Blvd.

Spengler's Immune-Blood in Pulmonary Tuberculosis

(A Preliminary Case Report)

By

JOSEPH HOLLOS, M.D., New York City

I HAVE already given an account of the treatment of tuberculosis with Spengler's immune-blood in CLINICAL MEDICINE AND SURGERY.* At this time I wish to present a case of subacute pulmonary tuberculosis, in which the application of Immune-Blood not only arrested the progress of the disease and all its clinical manifestations, but the patient, who had been facing a relatively bad prognosis, was helped toward complete recovery without the necessity of giving up her work. I wish to emphasize the phrase, "without giving up her work," since rest is one of our principal agents in the treatment of tuberculosis. In this case the result achieved cannot be ascribed to rest, since the patient continued working during the entire course of treatment.

Case History

Mrs. Mary F., 50 years old, presented herself on August 3, 1938, having had a cough for more than six months and lost 12 pounds in weight. For the previous two months she had been under pneumothorax treatment. She claimed that her physician dismissed her as incurable. Recently she had been growing gradually worse—cough and sputum increased in intensity and quantity. She was nervous and weak, could not sleep, and had frequent headaches. There was no history of tuberculosis in the family. She was a widow, and had two children.

The patient was moderately developed and somewhat emaciated; the supraclavicular spaces were sunken; there was dullness on the right side over the upper part of the upper lobe, with bronchial (somewhat bronchocavernous) breathing and subcrepitant râles. Dullness was found over the right base, with crepitant râles; also slight dullness over the left apex, with harsh breathing. Her pulse rate was 106; weight, 109.5 pounds (21 pounds underweight); temperature, 99.6° F. She expectorated much sputum, with many tubercle bacilli.

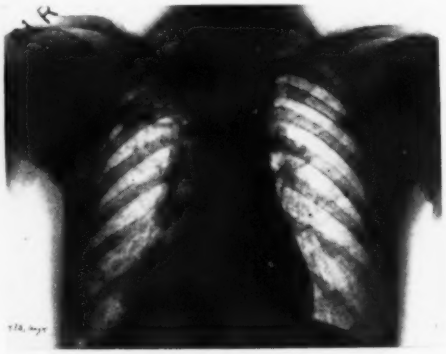


Fig. 1.

On August 4, 1938, Dr. F. Bettelheim made a roentgenogram and reported (see Fig. 1):

"The right lung shows considerable fibrosis

*Treatment of Tuberculosis with Spengler's Immune-Blood. Jan., 1926. Mass Treatment and Control of Tuberculosis by Immune-Blood Inunctions. Nov., 1933.

and shrinkage of its entire upper lobe, within which numerous areas of relative transparency are noticeable. A cavity about 3 by 2 centimeters, the wall of which is medium-thick and blurred, is seen in the apex of the right lower lobe; the medial half of the lower one-fourth of the right lung is occupied by a rather homogeneous shadow with blurred contours.

"The entire left apex and subapical region

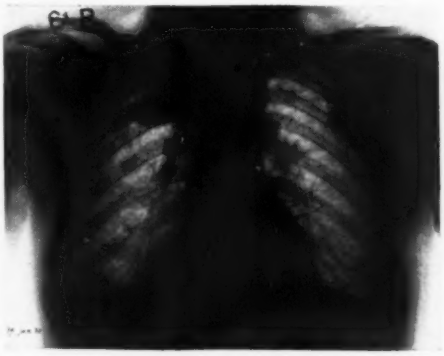


Fig. 2.

shows heavy fibrosis and a few fairly sharply outlined, but coalescing, areas of consolidation, mostly of considerable density. Smaller nodular shadows of the submiliary type are seen scattered throughout the rest of the left lung, particularly in its base."

On the basis of this clinical picture, my first thought was to refuse to give this patient ambulatory treatment, and to refer her to a sanatorium. However, she categorically refused to go to a sanatorium, since she had just invested all her money in a boarding house and absence from her business for any length of time would ruin her economically. I therefore felt obliged to begin her treatment. The pneumothorax treatment was discontinued.

I gave her Immune-Blood No. VI (dilution 1:1,000,000) for daily inunctions of 5 drops. She returned in a week saying that she felt stronger and that her appetite was better. Her pulse rate was 104; weight, 111.5 pounds (a gain of 2 pounds).

I then began to give her Immune-Blood injections, of 0.5 cc. each, hypodermically, at intervals of from ten days to two weeks, the initial dose being No. X (dilution 1:10,000,000,000). The dilutions were gradually reduced, until she was receiving the undiluted Immune-Blood, in doses of 0.2 cc. Between injections, the patient continued daily inunctions, with gradually increased doses (diminished dilutions).

The results were beyond my expectations, since the patient refused to quit working and during the entire course of treatment had very little rest. Within a month her pulse rate went down to 96, and she gained two more pounds in weight.

From September onward, all the clinical symptoms diminished markedly, and a few months later râles were heard only to a small extent. At the end of January, 1939, she coughed only a little; the sputum was greatly diminished; pulse, 88; weight, 129.5 pounds. In April, 1939, her sputum became negative for tubercle bacilli and remained free of them.

Radiographs taken on January 30, 1939, still showed evidence of serious lesions, according to the following report (see Fig. 2):

"Since the last examination, on August 4, 1938, the number of the submiliary nodular shadows in the left lung has decreased and the nodules themselves have become sharply outlined (fibrotic). On the other hand, the lower thirds of the right chest show submiliary nodules in increased numbers, some of them sharply outlined, but many of them blurred and of recent origin. No appreciable change in the upper lobes is noticeable."

Under continued treatment, the clinical condition of the patient showed remarkable improvement, and on September 27, 1939, I made the following notes:

The apices are sunken, especially on the right side; in the upper lobes there are harsh breathing and prolonged expiration, more marked on the right side; over the bases, slightly broncho-vesicular breathing; no râles; pulse, 76; weight, 140 pounds (a gain of 30.5 pounds).

Radiologic examinations by Dr. Bettelheim, on October 20, 1939, were reported as follows (see Fig. 3):

"The right lower lobe shows streaks of shadow that cover the medial one-third of the right

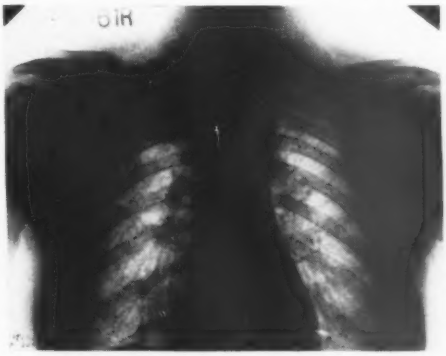


Fig. 3.

base. The dense consolidation and the large number of submiliary nodules have disappeared from this area. The left lower pulmonary field has a fairly normal appearance. The upper lobes show progressive shrinkage. No cavity can be distinctly outlined in the right upper lobe."

The patient then appeared to be, and considered herself, in good health. She coughed only slightly and occasionally, with a minimum amount of sputum.

Since that time (up to February 25, 1940), I have been giving this patient hypodermic injections of 0.2 cc. of the original, undiluted Immune-Blood, every three weeks. She is feeling well; weighs from 138 to 140 pounds; does not cough; and her pulse rate varies between 72 and 84. I intend to continue Immune-Blood treatment for a few more months, to make certain of a complete cure.

1018 E. 163d St.

A Living for the Doctor

The Business of Medicine and the Art of Living

Associate Editor: Ralph L. Gorrell, B.S.M., M.D., D.N.B.

Think Fast

THE patient ox lumbered across the fields of Europe a few centuries ago, dragging a crooked stick with a piece of iron on the end of it—and they called it plowing. They still do it that way in many of the backward countries. We use a tractor and a gang-plow.

The peasant of the fifteenth century—and, to a large extent, those of today—when he wanted to go somewhere, went afoot or on the willing back of the plodding ass. We use the "Twentieth Century Limited," or, perhaps, an airplane.

Our medical fathers threw the saddle and saddle bags on old Dobbin, or hitched him to the buggy, and made their leisurely rounds in sun or rain, dispensing clysters, cataplasms, and embrocations as they went along. We use a high-powered car to dash from office to laboratory and from laboratory to hospital, and we give our treatment through a needle or with an ultraviolet machine.

The world has speeded up; but some of us are *thinking* at the same rate our fathers thought. It won't do! The man who expects to keep up with the procession, in these days, must *think fast*, and, at the same time, think *straight*.

Gone are the joyous and expansive days when the doctor could dream over his pipe, while jogging along over the rutted or frozen roads to see Aunt Susan, or cock his feet up on the desk for a satisfying session with "Pickwick Papers." If we aren't up and scratching, early and fast, some earlier and faster scratcher will seize the worm (means of subsistence) right out from under our noses.

To think rapidly, and at the same time accurately, means that a man has to "know his groceries," and if he doesn't know them he might as well go out of the grocery business.

That means *work!* But who's afraid of work?

G. B. L.

The "difficult" is that which can be done immediately; the "impossible," that which takes a little longer.—GEORGE SANTAYANA.

Therapeutic Hobbies

THE farmer who is happy and calm only when he is hard at work in the fields needs an avocation for less busy times of the year. The businessman who works hard at his business all day and carries it home at night, whether in his head or a briefcase, needs a change of occupation and diversion, during the evening hours and weekends.

Occupational therapy has only begun to make a start. Every time an examination has failed to reveal organic disease sufficiently marked to account for all the symptoms present, the physician should spend a few minutes asking the patient about what he does in his spare time (hobbies? sports?).

The avocation must be a *relaxation*, not a continuation of the struggle to do better than the other fellow. The golfer who rages when he gets in a trap; the woman who fusses about the extreme accuracy of the leisure-time sewing, should be encouraged to take up some other pursuit that is not competitive, either with other people or with one's own past record.

It takes an alert physician and one with commonsense to realize that a slight abnormality will not cause symptoms. Nothing can illustrate this point better than the changing views on gynecologic surgery. Nowadays, we do not expect a perineorraphy or uterine suspension to cure a deep-seated aversion to the husband or to intercourse, or to relieve a vague backache and weakness.

R. L. G.

"Success is a *result*, and not a *cause*. It is a *cart*, and the work you do every day is the *horse* that pulls it."—"Target Talks."

CLINICAL MEDICINE AND SURGERY is full of helpful suggestions for everyday use. — Dr. A. W. J., Los Angeles, Calif.

We or "Wee Wee"

(Save Our Priceless Heritage!)

By
M. A. Austin, M.D., Anderson, Ind.

MY *allegory* starts with the first *we*, and refers to the entire medical profession, apparently enjoying ourselves in various degrees of prosperity and sitting back in self-satisfied contentment. The *wee wee* is expressive of the state the medical profession will be in unless they become fully aware of the nearness to regimentation, the need for greater cooperation, and unless we make each community responsible for meeting all the local medical problems that economic changes have brought upon us—changes which we *must meet*, or *we* will be changed from an independent profession to a bunch of job hunters, with a most demoralizing effect upon our ideals and our services. And to fully explain this wee wee, it means that the doctors will be exactly like the little boy standing cross-legged in school, trying to get his teacher's attention, in order to save himself from wetting his panties.

For twelve of my forty years in practice I was a horse and buggy doctor, and I look back now to that time as my happiest years—years when the pursuit of success was a part of the game; years when patients were all friends whom I served, as I in turn expected my friends to serve me.

With the advent of the automobile we had a new class of doctors as competitors—men who wanted a shortcut to wealth, and who sold quantity service worth no more than they were paid, and yet who found a market for their wares, in lodge and club practice, at two dollars a year per family. Gradually the true worth of their services was appraised, and now only one of the fifty doctors in my community does any of this work.

Then came the era of overspecialization and mechanized Medicine, and due to this, as much as anything else, we find ourselves facing a drastic change. A nationwide Committee, formed to combat the socialization of Medicine, has sent out a booklet called "The Achilles Heel of American Medicine," and its opening paragraph states: "The weak spot in American Medicine is its singleness of purpose. Its greatest danger lies in the exclusiveness of its devotion to scientific improvement and technical effectiveness."

We have made Medicine such a nightmare to the laity, by publicizing its attainments in unusual cases, that the layman has developed a doctor phobia. Our various campaigns have undoubtedly done far more good than harm, in giving information about tuberculosis, syphilis, cancer, and pneumonia; but, with the demand for an early diagnosis, is the inevitable accompaniment that this diagnosis and the treatment of these conditions take both time and money. As a direct outcome of this propaganda, the treatment of these patients has become more and more a State function.

I went through the influenza epidemic at Camp Custer during 1918, and in one day 141 boys died. In my opinion, as many of them died because of their *environment* as from the disease; and the same hospital fear is engendered in many patients who die in hospitals, and yet who might possibly have survived had they had ordinary treatment in their home surroundings, aided by the encouragement of love and affection by their family and friends.

Unfortunately, the home has become merely a place to go to when everything else is closed. A person is born in a hospital; given a superficial education in schools that President Hutchins, of Chicago, says are the worst in the world and have the poorest teachers; the children go through adolescence in automobiles, and if lucky, are married in a church; they live in an apartment and entertain at a picture show; they eat at a drug store; die in a hospital; are buried from a mortuary; and stored in a mausoleum. The only "God Bless Our Home" motto that I know of is in a museum. The responsibility of parenthood has been taken over by the State and a mother's pension. The responsibilities of one's parents is also a State function now, with old-age pensions. And too soon, I fear, the family physician will be merely a medical technician, subsidized by the government, and as impersonal as his probable ally, the unemployment relief part of the social security set-up.

For years I really was serious when I wrote or spoke upon medical economic subjects, and many matters which I long ago summarized have had volumes written about them later. But no one that I ever knew took any of my warnings seriously, so I developed an ironic vein of criticism, which has made a far greater impression than any other method. As secretary of my County Society for twenty-two years, I learned that giving the men a dollar dinner for fifty cents was the best way to have a crowd, and most of those who stayed for the meeting had more in their bellies than they had in their brains when they left. As councilor for my district for fifteen years, I became more conscious of the responsibilities of the profession as a whole than can any practitioner dealing only with his own problems. As a member of the State Executive Committee for the past three years, and giving from fifteen to thirty days' time a year to Organized Medicine's problems, still graver worries have been brought to my attention. But these have now ceased to be worries that any few men can or should carry. Unless *every man in the profession* gives these problems the serious consideration they deserve, we face the same ending that socalled political expediency brought to the profession in Europe—regimentation and impersonalized medical care.

The greatest advance in the teaching of medicine that I know of has just been inaugurated in Johns Hopkins Medical School, where all third- and fourth-year students will be given dispensary patients to be treated *in their own homes*. Robinson, in his article in the *Journal of the A. M. A.* (Nov. 25, 1939) announcing this new plan, states that sixty-five percent of these patients have adverse social conditions as a background of their illness,

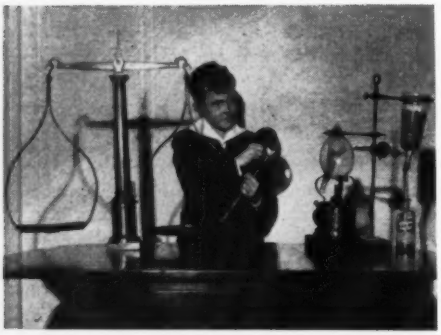
and that thirty-five percent have emotional conditions mainly responsible for their disease. This merely verifies what I have already said about the futility of scientific treatment without a knowledge of humanity in its own environments. God only knows how much unnecessary treatment has been given and how much unnecessary expense the people have had because of the lack of the knowledge that the old physician-family relationship fostered.

The National Physicians' Committee for the Extension of Medical Service* must be given wholehearted support, to combat the propaganda by various groups seeking to socialize the profession. Independent private practice must be maintained, as well as independent hospitals. The needs of each community must be studied by each local group, and any federal or state grants must be based on locally-demonstrated needs and disbursed according to those needs by *local administrators*.

If we are to control health measures in our various communities, we must show that we are capable of doing so, and *more* capable than politicians or social workers. To make this come true, *we must give to it some of our time* and possibly a large sum of money. But if we don't, we probably will have a wet seat to sit on and get a proper spanking besides.

*Address, 700 North Michigan Ave., Chicago, Ill.

★ Notes and Abstracts ★



Courtesy, Bureau of New Orleans News.

They Operated by Candlelight

SURGERY was a perilous business in the days of our granddads. For emergency operations at night, they illuminated the operative field with candles equipped with special reflectors, like the one the lad in the middle of the picture is holding. On the left is a prescription scale of fearsome proportions; and on the right a percolator and still for making medicines, used during the Civil War.

These interesting souvenirs of old-time medical practice are on exhibit in the historic Cabildo (now the Louisiana State Museum), in New Orleans.

Nurses and Professional Fees

To send a bill to a nurse is regarded, by most physicians, as a breach of good manners, but some of them waive any objection which they may feel where the bill is to be paid by an insurance company.

In a case which occurred not long ago, a distinguished surgeon rendered an account for sixty guineas to a nurse, in actual practice, whose nose had been broken in a traffic accident. The insurance company raised the point that nurses were, by custom, entitled to gratuitous treatment. In rebutting this suggestion, it was argued that the operation performed had considerably minimized the damages which might have to be paid. The judge held that there was no reason why a doctor should not send his bill to another doctor, or a nurse, if he had reason to think that the doctor or nurse would be in a position to pay it, and that the customary benevolence of the profession could not be pleaded to avoid payment. — *Med. World* (Lond.), Mar. 15, 1940.

[This English decision is of considerable interest. Nurses feel much hurt if a physician asks them to pay for his services, yet usually charge the physician, or members of his family, full rates for nursing care. It is the same old story—the person who gives much, instead of being thanked or appreciated for his Christian generosity, is blamed for not giving more.—ED.]

★ Books ★

Soilless Gardening

Ellis and Swaney

SOILLESS GROWTH OF PLANTS. Use of Nutrient Solutions, Water, Sand, Cinder, Etc. *By* CARLETON ELLIS and MILLER W. SWANEY. *New York: Reinhold Publishing Corporation.* 1938. *Price,* $2.75.

AT this season of the year, every wholly normal human being becomes a potential or incipient gardener, but many have no space or facilities for making these latent urges manifest in the usual way. Practically everybody, however, can become a soilless gardener, at modest expense, by using the detailed information contained in this fascinating book.

From "Chemistry of Plant Life," through growing in sand, gravel, cinders, and water, with nutrient solutions; household plant culture; commercial aspects; and special chemicals and hormones, to "Common Conditions Detrimental to Plants" and "Nutrient Formulas," the whole story is here, with a good index to find what one wants.

This book opens the door, for city physicians and those who have no extensive garden space, to a thrilling and relatively inexpensive (or even profitable) hobby.

The Seminar

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(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 4 (Medical)*

Presented by Leo Criep, M.D., Pittsburgh, Pa.

(See CLIN. MED. & SURG., April, 1940, p. 155)

RECAPITULATION: A man, age 34, had had "dizzy spells" as long as he could remember. Sometimes the attacks occurred several times a day for two or three weeks, followed by some days of freedom. At times there was partial or complete loss of consciousness, with or without belching of gas and nausea. Usually his hearing was decreased, and the attack ended with a cold sweat. He thought that eating pork or eggs had some relation to the "dizzy spells."

The *general physical examination*, plus careful urine and blood studies; hearing, audiometer, and vestibular tests; and other laboratory examinations, showed nothing abnormal.

Requirements: Suggest possible causes for these attacks, *giving reasons*. What further examinations would you require to clear up the diagnosis? Suggest treatment.

Discussion by Noah E. Ruhl, M.D., Weatherford, Okla.

Two conditions might cause symptoms similar to those complained of by this patient: *hyperinsulinism* or *petit mal epilepsy*.

A differential diagnosis may be made by testing the blood-sugar levels hourly, for from 4 to 6 hours.

If the blood-sugar level reaches from 50 to 70 mg. percent, the diagnosis of hyperinsulinism is confirmed, and that is my diagnosis in this case.

Treatment: For the attack (if the patient is able to swallow), give orange juice, candy, dextrose, or some quickly-absorbed form of sugar. If unconscious, give dextrose intravenously.

For mild cases, prescribe a diet of about 2250 calories (90 to 150 Gm. of carbohydrate; 60 to 70 Gm. of protein; and the rest fats, largely cream and butter). Give from five to seven feedings daily.

Severe cases, not yielding to dietary treatment, may require surgery.

Discussion by Angelo A. Barberio, M.D., Brooklyn, N. Y.

The symptoms and history in this case suggest the syndrome of *hyperinsulinism*. The refusal to eat pork and eggs is not, in my opinion, related to the symptom complex.

Necessary laboratory work would include fasting blood-sugar and dextrose tolerance tests. The ear and brain tests have already been proved negative.

Treatment in this case would consist of a low-carbohydrate diet, with a moderate to high fat and normal protein content, but frequent small feedings may possibly prove more satisfactory.

Discussion by George B. Lake, M.D., Waukegan, Ill.

The history of this case, together with the complete absence of abnormal findings by any ordinary clinical or laboratory examinations, especially suggests *two* conditions, either of which might have caused the symptoms described, and neither of which would have been discovered by *ordinary* clinical or laboratory methods. These are: (1) *Allergy*, because of the early onset of the "spells," and because the patient felt sure that the eating of certain foods had something to do with this trouble (the opinions of intelligent adults, on such matters, are worthy of serious consideration); and (2) *hyperinsulinism*, because, in several particulars, the symptoms are typical.

Differential Diagnosis

To confirm or rule out *allergy* as a cause, I should have taken a *complete* personal and *family* history, to determine whether or not there was an allergic familial background and whether there were other suggestive symptoms besides the "dizziness" and the gastro-intestinal disorders. I should then have made skin and *dietary* tests to discover possible sensitiveness to pork, eggs, and, perhaps, other substances.

To establish a diagnosis of *hyperinsulinism*, I should have inquired *carefully* as to the *time relationship* between eating and the attacks and, if the spells came on *when the stomach was empty*. I should have ordered fasting blood-sugar and dextrose-tolerance tests (repeated, if necessary), which would have been conclusive, one way or the other.

Treatment

The management of both of these conditions is well established on general principles, and so need not be described in detail. If *both* disorders were present (which is by no means impossible), they should have been treated concurrently.

Solution by Dr. Criep*

Labyrinthine vertigo, of allergic origin, is fairly

*Adapted from *Penn. M. J.*

*Adapted from *Penn. M. J.*, Dec., 1939.

common. The pathologic physiology is probably an edema of the various structures of the internal ear. The symptoms depend on which of these structures are involved.

The diagnosis of allergic vertigo (after examination has ruled out more common causes) is based on one or more of these points: (1) A positive family history of allergy; (2) the presence of other allergic manifestations, such as asthma, hay fever, urticaria, vasomotor rhinitis (perennial hay fever), etc.; (3) a history of symptoms following the ingestion of a food or drug; and (4) the finding of eosinophilia and positive skin tests or the response to injection of epinephrin during an attack.

This patient can bring on an attack by eating foods which contain milk or eggs, drinking milk, or eating pork. He has no family history of allergy. He was markedly sensitive to garlic. On thinking it over, he recalled that many of his attacks of vertigo came after the evening meal, and further inquiry revealed the presence of garlic in a seasoner shaker. Positive skin reactions were obtained also for egg, milk, pork, and parsley. On eliminating these foods from his diet, his vertigo entirely disappeared.

Error in Discussion

REGARDING my discussion of Problem No. 2 in the April issue of "C.M.&S.," I find an error, on page 155, which probably was due to my carelessness in writing.

Concerning the administration of Salyrgan for edema of cardiac origin, I meant to state that ammonium chloride should be given for two days preceding each dose of Salyrgan, in the amount of 5 *grams* daily, in divided doses. In the discussion as printed it says 5 *grains*, which, of course, is an entirely inadequate amount.

A. E. MCMAHON, M.D.

Glenwood City, Wis.

Seminar Problem No. 6 (Diagnostic)*

Presented by James A. Lehman, M.D., Philadelphia, Pa.

A WOMAN of 35 years was admitted to the hospital, with a temperature of 98.8° F., for removal of an acutely inflamed appendix. The immediate postoperative reaction showed a rapid rise in temperature, high pulse rate (out of proportion to the other symptoms), and a state of excitation with high blood pressure. During the first 24 hours the condition was not diagnosed. Then a fall in blood pressure and pulse rate prompted the administration of epinephrin, because it was considered that the patient was having secondary surgical shock. There was an immediate rise in temperature, pulse, and respiration, and the patient died within 48 hours after the operation.

The usual laboratory procedures (urinalysis, blood counts, etc.) and physical examination did not reveal anything unusual. The appendix was not perforated, nor did it rupture during removal. At no time, was abdominal tenderness or distension more marked than after any removal of an acutely inflamed appendix.

The pulse rate, 24 hours after the operation, was 130; temperature, 102° F. The patient seemed highly excited and nervous, and obtained little rest with morphine and sedatives.

Her past history was of no value in making the diagnosis. She took no medicines, and had never had a serious surgical or medical condition.

Requirements: Suggest your tentative diagnosis and state what further information you would need to make a definite diagnosis, *giving reasons.* What, if anything, might have been done to save this patient's life?

*Adapted from *Penn. Med. J.*

TENACITY OF PURPOSE

We may conclude that the following traits and trait elements, appearing in childhood and youth, are diagnostic of future achievement: An unusual degree of persistence; *a tendency not to be changeable, or* tenacity of purpose; perseverance *in the face of obstacles, when combined with intellective energy, mental work bestowed on* special interests, profoundness of apprehension, originality of ideas, *and the vigorous ambition expressed by the possession to the highest degree of* desire to excel.

The appearance, within the group of "most eminent" men, of individuals who, according to the records, possessed in childhood intelligence somewhat below the highest order is explained by this conclusion; that high but not the highest intelligence, combined with the greatest degree of persistence, *will achieve greater eminence than the highest degree of intelligence with somewhat less persistence.*—CATHERINE M. COX, *in "Early Mental Traits of 300 Geniuses."*

FREEDOM AND RESPONSIBILITY

Man, endowed with freedom, will use it wrongly and use it rightly; and which is the right way and which the wrong he will not know until responsibility enlightens him.—CHARLES EDWARD RUSSELL.

PERFECTION

Perfection, as some state of unchanging bliss, is not only impossible, but undesirable; but, by man's very nature, the going toward it, the striving for it, the adventure, the excitement, the romance of the search is the very perfection that he seeks.—ALBERT E. WIGGAM.

Clinical Notes and Abstracts

Hydrochloric Acid by Rectum

FOR several years I have used hydrochloric acid in the rectum with most satisfactory results in cases of bleeding hemorrhoids, ulcers, infected crypts and, on one occasion, for a thrombus about the size of a walnut, which I incised, expressed the clot, and treated by placing in the rectum about 60 cc. of 1:200 hydrochloric acid solution. This was retained without discomfort.

It was necessary for me to make a visit to this patient's place of business a few days thereafter, when he told me that he had been so comfortable that he did not think it worth while to make a visit to me.

Last week, evidences of a gradual increase in my own blood pressure became apparent, probably due to a chronic bronchitis. I went to Dr. Miles Watkins, who found my blood pressure to be 200/105, and gave me a preparation of Luminal-theobromine. After taking seven of these tablets, a generalized rash covered my body, legs, and arms. This was easily removed in 36 hours by an intravenous injection of hydrochloric acid (25 cc. of a 1:500 solution).

Dr. Watkins was much pleased at a reduction in my blood pressure to 195/95. This continued for two days, when I went to see a specialist in colonic irrigation, taking with me 5 cc. of pure HCl. This I had him put into three gallons of water, with which he proposed to irrigate my sigmoid and lower colon.

At once, on the beginning of the return flow, the irrigationist expressed amazement over its character. An increase of the peristalsis was apparent, but no lumps of fecal matter appeared, all being finely subdivided; there was also a total absence of any tenesmus at the anus. This had been accomplished with approximately a 1:2,500 solution of hydrochloric acid.

In 24 hours after the irrigation, Dr. Watkins found my blood pressure to be 170/90; and 36 hours later (taken by his nurse and technician) it was 168/70.

The hydrochloric acid may be taken by irrigation in a much stronger solution than that I received. Remember that the normal concentration of this acid in the stomach is from 0.2 to 0.4 percent (1:500 to 1:250).

To show that HCl can be absorbed from the rectum, I shall mention the case of a woman in New Jersey, who had suffered with arthritis for 15 months, and had had all of her teeth extracted, with little benefit.

Having heard of my work, she wrote to me for advice and asked what I would charge to come and see her. I sent her this information and suggested that, pending my visit, she might inject 30 cc. of a 1:200 solution of HCl into her rectum each night, and retain it.

For three weeks I heard nothing from her, and then I received a letter stating that she was walking with little discomfort and that her condition had improved greatly. Intravenous injections of the acid would have been much better, and in one week would have done what it took three weeks for the rectal injections to accomplish.

The results I have mentioned may, I think, be attributed to Metchnikoff's generalization: "The one constant factor in immunity, whether innate or acquired, is phagocytosis."

BURR FERGUSON, M.D.

Birmingham, Ala.

[In personal communications, since this was written, Dr. Ferguson has reported some astonishing results from this form of treatment, in cases of hypertension and other disease states, so that this method seems well worthy of a careful trial. —ED.]

X-Rays in the Diagnosis of Endocrine Disorders*

THE roentgen-ray examination, in cases of suspected endocrinopathy, should include the chest and skeleton, to estimate the size of the heart in relation to that of the thoracic cage; to detect the presence of thymic enlargement; to demonstrate the stage of bone development of the patient, the growth of the accessory sinuses, changes in the skull and sella turcica; and to eliminate such diseases as osteogenesis imperfecta, rickets, achondroplasia, et cetera.

Thymus: Roentgenographic enlargement of the thymus, as shown by increased width of the mediastinal shadow with lobulated borders in the anteroposterior projection, is not an accurate criterion for diagnosis. Lateral views, to demonstrate compression of the trachea (the shoulders must be held back), are necessary. Many pediatricians think that too many symptoms have been attributed to thymic enlargement.

Teleroentgenograms of the heart are useful for comparison with those, standardized for age, weight, and height, of normal children.

Bone growth and development can be estimated by x-ray examination of the epiphyseal centers of ossification and the shafts of the long bones; and this information is especially useful in cases of infantile or juvenile hypothyroidism, thyropituitarism, and gonadal disorders.

There are many standard tables for comparison ("The Atlas of Skeletal Maturation," by Todd, is the best), from the ages of 3 months to 16 years, in girls, and 19 years in boys.

The appearance of ossification centers is a good register of progressive maturity, if the centers are

*Pennsylvania M. J., Sept., 1939.

considered in groups; but the precise age at which each center appears is so greatly influenced by health that the use of ossification dates, without careful reservations, may be misleading. The real advantage in noting ossification dates is the information given by them on the availability of mineral supply of the bones and on the state of preparation of the cartilage for ossification. *The diagnosis of thyroid deficiency at birth may be made by the roentgenographic examination of the knee and ankle.*

The early union of the epiphyses with the diaphyses, indicative of a rapid maturation rate, is an important finding in cases of *hypergonadism*. For the correct roentgen-ray interpretation, not only must the union of the centers and the diaphyses be observed, but also the changes in the shafts, especially those indicative of the assumption of adult characteristics.

Skull examination: The maxillary antrum is the only sinus present at birth, and the development of the other sinuses is dependent upon the function of the endocrine glands. In all pituitary disorders, evaluation of the rate of development and growth of the frontal sinuses is of utmost value. After therapy has been instituted, frequent serial examinations are indicated to observe the effect of treatment in stimulating their growth.

Rickets can be recognized by a frayed-out appearance of the zone of temporary calcification; the bowing of the shafts; the cupping of the diaphyseal ends; and the "moth-eaten" epiphyseal centers.

Achondroplasia is characterized by broad epiphyseal centers with shortened and thickened ends of the diaphyses in the hyperplastic group. *Osteochondritis* is usually characterized by fragmentation.

RALPH S. BROMER, M.D.

Bryn Mawr, Penn.

Systemic Detoxication in Asthma

IN 1926, a very feeble old man of 67 years applied for relief from a most severe attack of asthma, and gave the following history, after he was made comfortable:

He had suffered with asthma for 17 years, and recently had required as many as from four to six hypodermic injections of epinephrin every night. Near day, he would doze, and later slept soundly until afternoon. He never cared for food during the day, but in the evening ate heartily of fried food (meat), hot fresh bread, and pie. Within about two hours he required his first hypodermic injection.

After several days, he was persuaded to try an evening meal of *one* slice of day-old or older whole-wheat or rye bread, and canned or mixed stewed fruit. His attacks were not so severe nor so frequent the first night. In a week slept through the night, and wanted his breakfast. Three weeks later, his wife told her neighbors (he lived in the country) that she had a new husband. Very soon he returned to work for the first time in nine years, and he never had another attack.

This case led me to ask for the cause in all asthma patients, and I have found a number with liver enlargement; many with digestive disturbance (obstinately constipated, as one five-year-old boy, who had no evacuation for a period of five days, and was given an enema). Other causes were found to be overeating; drinking large quantities of fluids with meals; imperfect mastication; and the selection of unsuitable food, such as fried food, salt meats, hot fresh bread, pastry, cucumbers, sweet potatoes, etc., at the evening meal.

Possibly external influences may precipitate attacks in a highly nervous patient who has had asthma for many years, but these things do not *cause* asthma.

BOYCE D. BROOKER, M.D.

Richmond, Va.

[These suggestions remind one of the thesis of Haseltine and his co-workers, who maintain that asthma is a chronic disease, of toxic origin, which may exist for years without bronchospasm; and that the bronchospastic attacks are touched off by some nasal pathosis. The basis of their treatment is general systemic detoxication.—ED.]

Headache

THE patient who complains of headache should be questioned as to (1) the frequency, duration, and exact location of the pain; (2) the hour of the night or day, and the day of the week when they occur; (3) whether they are becoming better or worse; (4) whether there is an aura; (5) what influence a delayed meal, late sleep, worry, fatigue, and the use of the eyes have on the headache; (6) whether stooping, jarring, or shaking of the head influences the pain; (7) whether cold drafts or local heat influences the pain; (8) whether there is a family history of headache, hay fever, asthma, eczema, urticaria, or angioneurotic edema; (9) whether particular foods precipitate a headache; (10) whether there is evidence of infection or obstruction in the nose or ears; (11) whether menstruation or pregnancy influences the headache; and (12) what previous treatment has been given. Never forget that the patient may have two kinds of headache, the one perhaps of little consequence, the other the symptom of a fatal illness.

The headache of *increased intracranial pressure* is accentuated or precipitated by coughing, stooping, straining, or shaking the head (motions which increase the intracranial pressure). The commonest cause of headache is *migraine*. Ergotamine tartrate relieves 90 percent of migraine headaches. The dose is 1 mg. (placed under the tongue) twice daily, or 0.5 mg. given subcutaneously.—H. W. WOLTMAN, M.D., in *Minn. Med.*, Jan., 1940.

Skin Eruptions in Children

OVERDRESSING infants in too many woolen, silk, and rayon clothes, is a common cause of skin eruptions.

Diaper rashes (intertriginous erythema, gluteal erythema) are treated by (1) early training in the toilet habit; (2) frequent changes of diapers; (3) rinsing diapers in boric acid solution after washing; (4) application of liberal amounts of a neutral powder to the areas, after thoroughly washing off with water all soap solution; and (5) the elimination of rubber panties.

Eczema may usually be treated without withholding any basic element of diet. The clothing should consist of linen and cotton. Local applications are

usually all that is necessary. Most cases of dermatitis of the face, with folliculitis, are cured by stopping the use of water and using neutral powder.—S. H. SILVERS, M.D., in *J. Ped.*, Feb., 1940.

Allergic Dermatitis

THE choice of local medication for the treatment of allergic dermatitis is based upon the acuteness of the condition. *Acute eruptions*, manifested by bright erythema, papulovesicles, and edema, often respond well to astringent wet compresses of lead acetate and alum, boric acid, or physiologic saline solution. This is suitable if the lesions are located on the extremities or face.

Secondary infections, pustules, and impetiginized areas may be treated with dilute copper and zinc solutions or potassium permanganate. When crusting is localized or extensive, boric acid ointment or diachylon ointment should be used for a short period, until the crusts are removed, following which the treatment is as previously mentioned.

Soothing alkaline antipruritic lotions are of benefit in extensive eruptions where exudation is not marked, or where packs are unsuitable. Restraints aid in keeping medication in place, as well as preventing scratching and excoriation. Treatment should be continued until there is maceration of the vesicle and decrease of edema and erythema. When this occurs, symptoms will decrease and the eruption may be treated as subacute or chronic.

Subacute or chronic stages present papules, papulovesicles, dull erythema, and lichenification; secondary lesions consist of excoriations, scales and crusts. Ointments containing tar, particularly crude coal tar, the percentage varying from ½ to 6 percent are useful; but patients should be instructed to stop using the tar if an initial favorable response is followed by sudden irritation. Greasy ointments and soapy water tend to aggravate eruptions. Drying lotions, such as calamine or zinc lotion, with 5 percent of liquor carbonis detergens, are valuable. Bland ointments may be used, such as zinc paste with ½ percent alcohol. — E. M. RUSTEN, M.D., in *Minn. Med.*, Jan., 1940.

Symptoms of Ovarian Follicular Hormone Deficiency

THESE symptoms make up the syndrome of ovarian follicular hormone deficiency (menopause, castrated women, involutional melancholia) and are present in the percentages of the cases indicated: (1) Menstrual disturbances, 99 percent; (2) subjective nervousness, 97 percent; (3) hot flushes, 89 percent; (4) excitability, 85 percent; (5) fatigability and lassitude, 83 percent; (6) depression and crying, 77 percent; (7) constipation, 76 percent; (8) irritability, 75 percent; (9) tachycardia, palpitation, and dyspnea, 68 percent; (10) vertigo; (11) decreased memory and concentration, 66 percent; (12) disturbed sleep, 66 percent; (13) amenorrhea, 57 percent; (14) headaches, 56 percent; (15) psychoses, 52 percent; (16) occipitocervical aching, 50 percent; (17) scotomas, 49 percent; (18) numbness and tingling, 48 percent; (19) cold hands and feet, 35 percent; and (20) formication. —A. A. WERNER, M.D., in *Miss. V. Med. J.*, Sept., 1939.

Poison Ivy

"LEAFLETS three—let it be" is an old adage concerning poison ivy. The easiest way to identify poison ivy is by its leaves, which consist of 3-pointed leaflets. The center leaflet has a long stem; the two outside ones, short stems (Virginia creeper or woodbine, often mistaken for ivy, has five leaflets instead of three). Small, greenish-white flowers appear in loose clusters from late May until July; then greenish-white berries, about the size of small currants, form (see picture).

Courtesy, O. M. Scott & Sons Co.

Treatment: Frequent cultivation will keep poison ivy under control, or a few drops of sulfuric acid may be applied to the woody stems near the ground. Along fences, walks, and roads, where injury to other vegetation need not be considered, hot brine solution (3 pounds of salt in a gallon of hot and slightly soapy water) may be sprayed on with an air-pressure sprayer or sprinkling can. Crank-case oil, thinned with kerosene until it sprays easily, is more effective than salt for late-season defoliation, but must not come into contact with valuable trees.

An age-old custom of the American Indians was to eat the poison ivy leaves early in the spring, and thus become immunized.—*Lawn Care*, Sept., 1939.

[Others have reported that the Indian method is effective, but there are now several preparations of extract of *Rhus toxicodendron* for the prophylaxis and treatment of ivy poisoning.—ED.]

Unusual Positions of the Appendix

THE "low" appendix, which hangs over the brim of the pelvis and extends for a variable distance into the pelvic basin, cannot be diagnosed unless a rectal or vaginal examination is made. *Frequency of urination or diarrhea* are not uncommon symptoms, owing to irritation of the bladder or rectum. If the thigh is flexed and then rotated, pain often

follows, because the obturator internus muscle is irritated by the inflamed appendix (Cope's sign).

Acute intestinal obstruction is usually diagnosed when copious vomiting is present (the inflamed appendix lies behind the attachment of the mesentery).

A retrocecal appendix, if protected by a fat abdomen or a distended cecum, may be associated with but little abdominal tenderness or rigidity. In these cases, tenderness can usually be elicited by deep palpation in the loin, and hyperesthesia of the skin of the right lower quadrant can be demonstrated, if the appendix is distended.—R. J. McNeill Love, F.R.C.S., in *Med. World* (Lond.), Mar. 8, 1940.

Testosterone Propionate

Questions have reached us, in connection with Dr. Gorrell's article which was concluded in the May issue of Clinical Medicine and Surgery, regarding the preparations of testosterone propionate used.

While Dr. Gorrell's personal work was done with Perandren, a number of the other workers, whose reports he summarized in his paper, used Oreton, and some may even have used other preparations of the male sex hormone. It is safe to say, however, that his conclusions were based equally upon the results with Perandren and Oreton.

Electric Convulsion Therapy in Mental Diseases

Instead of the disagreeable, expensive and dangerous insulin or cardiazol (Metrazol) methods of producing convulsions, psychiatrists in Italy and England are now using small amounts of electricity, applied through electrodes over the skull, to produce convulsions. There is a temporary period of amnesia, so that the patient does not remember any painful episode. The convulsions are less severe, but are even more effective than those induced by drugs. Apparently only those patients will respond favorably who do well under other types of shock therapy.

The method is of great value because (1) its use does not call for a skilled staff, as there is no danger period nor long period of observation; (2) the dose may be accurately controlled; and (3) the patient will permit repeated treatments, because there is no period of mental agitation, such as frequently accompanies shock treatment with drugs. Certain patients apparently need a "maintenance dose," or repeated treatments over an indefinite period, to prevent relapses.—W. H. Sheppley, M.D., *et al.* in *Proc. Royal Soc. Med.*, Mar., 1940.

Treatment of Meningitis

Many meningitis patients die as a result of repeated spinal punctures. *One* may be needed for diagnosis, unless petechiae are present (in which case a blood culture is sufficient), but in treatment the serum *works better*, saves lives, and minimizes discomfort and danger, if given *intravenously*, mixed in several hundred cubic centimeters of 10-percent dextrose in physiologic saline solution, by the drip method, than when antitoxin is given intrathecally. I have given 100,000 units of antitoxin in this way, with no untoward results.

It may well be that a part of the successes obtained by treating this disease with sulfanilamide are due to the fact that *no spinal punctures nor intrathecal injections are given.*—Archibald Hoyne, M.D., F.A.C.P., Chicago, before the Medical Round Table of Chicago, April 9, 1940.

Rabies

Prompt cauterization of the wound made by the bite of a rabid animal should be done with fuming nitric acid, applied on the point of a glass-rod or with a fine pipette, so that the amount may be carefully controlled. Contact with bony, cartilaginous, or bloodless parts should be avoided. Pure carbolic acid should be applied to such parts and the fuming nitric acid to adjacent tissues. Such tissues heal well after the use of nitric acid. *Do not suture* wounds made by rabid animals.

The Pasteur treatment should be given: (1) To persons bitten by animals which have been proved rabid, either by clinical symptoms or by microscopic examination of the brain; (2) to persons whose hands or face have been contaminated with the saliva of a rabid animal, without being bitten (because of possible small wounds); (3) to persons bitten by stray dogs which cannot be located; and (4) to persons bitten, pending the laboratory diagnosis on the brain of the biting animal, if the symptoms or actions of the animal were suspicious.

Do not kill an animal until or unless definite clinical symptoms have developed, as the Negri bodies in the brain do not develop any earlier than the symptoms.—Louis Gershenfeld, M.D., in "Biological Products" (Romaine Pierson, Publishers).

Chronic Disorders of the Small Intestine*

The *symptoms* of chronic disorders of the small intestines are: (1) Fullness or cramplike pains after meals (if there is partial obstruction); (2) abdominal distress after meals; (3) flatulence; (4) diarrhea; (5) large, foul, fatty stools; (6) failing nutrition; (7) calcium imbalance; and (8) avitaminosis. Anemia often occurs as the result of inadequate absorption. Gross hemorrhage may occur from the jejunum or ileum.

Physical signs: (1) Malnutrition; (2) anemia; (3) signs of vitamin deficiency; (4) a possible irregular pattern of the dilated small intestine, with or without visible peristalsis (if the abdominal wall is thin, it is usually possible to distinguish distended loops of small intestine from the stomach or colon by the characteristic pattern and the type of peristaltic activity); and (5) possibly a mass (benign or malignant neoplasm, intussusception, infectious granuloma: Neoplasms vary in size, feel rounded and are usually movable and somewhat tender; an intussuscepted mass is firm, but soft or sausage-like; granulomas may be elongated, but are harder and more rope-like).

Roentgenologic signs: The small intestine remains the blind spot in the usual routine x-ray

*J.A.M.A., Oct. 21, 1939.

examination of the gastro-intestinal tract. A film should be taken between two and three hours after the barium meal, when the jejunum and ileum are usually well filled and the head of the barium meal is usually reaching the cecum.

These conditions may be found: (1) Chronic, intermittent intestinal obstruction, caused by post-operative adhesions (the patient often has attacks of severe, cramplike pain, without any symptoms between the attacks); if a roentgenogram is taken *during an attack*, a gas-filled loop of small bowel will be found; vomiting and diarrhea may also appear; (2) tumors of the small intestine; (3) diverticula of the small intestine; (4) chronic inflammatory disease; (5) subacute or chronic non-ulcerative enteritis; (6) chronic ulcerative enteritis; (7) tuberculous enteritis; (8) intestinal changes in deficiency states; and (9) functional disorders of the small intestine.

EVERETT D. KIEFER, M.D.

Boston, Mass.

Peridural Anesthesia

A MODERN development is the production of peridural anesthesia, by injecting the solution into the vertebral canal between the ligamentum flavum and the dura, at any desired vertebral level. From 25 to 50 cc. of 2-percent procaine solution are injected, which surrounds the nerve roots as they emerge from the dural sac, and a zone of anesthesia about eight vertebral segments wide is produced. Most of the hazards associated with spinal anesthesia are avoided and the duration is usually longer. —RALPH KNIGHT, M.D., in *Anesth. & Anal.*, Nov.-Dec., 1939.

Immediate Operation for Appendicitis*

THE Ochsner plan of treatment for general peritonitis is a snare and delusion. There are certain fundamental principles of an etiologic character which have never been given the consideration they deserve: (1) Every competent investigator has found anerobic bacteria in almost every case of severe appendicitis; (2) anerobic organisms are dependent for their development upon certain conditions of heat, moisture, exclusion of air, and the presence of dead or dying organic tissue; (3) many of the deaths following gangrenous or perforated appendicitis are due to wound infections, not to peritonitis.

The following treatment has given us remarkable results (*only one death in 106 cases of gangrene and peritonitis*): (1) No wound is closed which will probably be contaminated by pus; instead the peritoneum is sutured around the drainage tubes and the wound is packed with gauze containing an antiseptic solution; (2) all appendices are removed, if this is at all practicable, and pockets of pus are broken down, so that they will drain; (3) the gauze pack is removed at the end of 24 hours and the wound left open, without dressings, under a tent containing a 40-candle-power electric light; (4) for the first 24 hours the patient is placed upon his abdomen so as to permit free drainage; (5) fluids are given parenterally, prior to, during, and following operation, and transfusions are given when indicated.

Fresh air is a specific for anerobic infections. These wounds may appear dark, superficially, but the tissues do not slough and there is no indication of systemic toxemia. If the ileum is inflamed, a mushroom catheter is placed above this area, as a prophylactic enterostomy.

Mattress sutures of silver or Babcock wire are introduced down through the abdominal wall, to prevent disruption, and silkworm gut sutures also. The McBurney incision is used, and constant suction is employed through a Wangensteen tube.

H. A. GAMBLE, M.D., F.A.C.S.

Greenville, Miss.

*South. Surg., Dec., 1939.

The Treatment of Epilepsy*

THE bodily disorders that help to produce epileptic seizures must each receive appropriate therapy. Brain tumors, meningeal scars, endocrine disorders, emotional disturbances, toxic conditions, inadequate physique and poor regimen must be treated individually. *The most dramatic relief from seizures that I have seen was obtained by patients who never took medicine for them.*

The majority of patients with epilepsy can either be relieved of their symptoms or helped to live a useful life in spite of them. The physician must never have a defeatist attitude, or the patient will turn to patent-medicine "cures."

Medicines: Bromides, barbiturates, and hydantoinates are the effective remedies.

Principles: The physician is to treat the *patient*, not just one of the patient's symptoms. If he stops the convulsions, but in doing so makes the patient stupid and an outcast, he fails. The physician is to *prevent the whole seizure*, not merely the involuntary muscular movement—the convulsion. Disturbances of consciousness, of sensation, and of mind are part and parcel of a convulsive seizure, or they may make up a seizure which is non-convulsive. More than two thirds of seizures consist simply of loss of consciousness. *The bromides and phenobarbital are of uncertain value in mild attacks; Dilantin is of value.*

Convulsions may cease for months or years after no treatment at all, so be conservative in saying that any medicine has really "cured" epilepsy. Do not continue sedatives if the patient is not benefited by reducing the number or severity of the attacks.

Technic: Because seizures are usually uncertain in the time of their occurrence, the concentration of the drug in the body should be maintained at a constant level; hence it must be taken daily. Only those occasional patients whose seizures occur periodically (as during the menses) or at a fixed time in the twenty-four hours, can concentrate medication immediately preceding the expected seizure.

A constant level of bromide and phenobarbital may be maintained, because these drugs disappear slowly from the body. Dilantin-sodium is excreted rather promptly. Phenobarbital may be given once daily, but because of the possible gastric irritation from large single doses, the bromides and Dilantin-sodium are best given three times daily. The drugs should be started with moderate doses, then increased until an increase does not result in a decrease of convulsions, or until symptoms of intoxi-

*J. A. M. A., Apr. 6, 1940.

cation appear or a certain maximum is reached.

The epileptic patient should not be considered cured, nor should all drugs be stopped, until the electro-encephalogram is normal. The dose of the drug should be *gradually* reduced, or convulsions will occur with increased severity. After one or two years of freedom, the dose is further reduced and several months later, gradually omitted. Seizures may return after many years of freedom.

Average doses: Phenobarbital, 1½ to 6 grains (0.1 to 0.4 Gm.) daily; bromides, 15 to 30 grains (1.0 to 2.0 Gm.) three times daily; Dilantin-sodium, 1½ to 3 grains (0.1 to 0.2 Gm.) three times daily.

WILLIAM G. LENNOX, M.D.

Boston, Mass.

Home-made Walking Iron

THE walking iron, or caliper, to be used by a patient wearing a leg cast, consists of a strip of brass about one-half inch wide, and from 30 to 40 inches long, depending on the size of the patient, which can readily be bent to form a U about the malleoli and the sides of the leg. At the ends of the brass strip, short, thin metal crosspieces are riveted at right angles, to be shaped to the roundness of the calf. In the center of the strip, a rubber block, which may be cut from an automobile tire, is riveted. When the strip is bent in the U shape, the rubber block forms the walking surface. The arms of the U-shaped caliper are placed in the weight-bearing axis of the tibia. The bottom of the caliper, with the rubber block, should not extend more than an ordinary shoe-heel depth below the plantar surface of the cast, or instability in walking will result.

A thin plaster cast is applied from the knee (or above, depending upon the position of the fracture) to the base of the toes. The leg is placed in the U of the walking iron and the two metal uprights bent to fit snugly against the plaster. More plaster is applied around the leg and iron, especial care being taken that a number of layers are criss-crossed beneath the foot, so that the iron will not slip forward and backward.—R. BRUBAKER, M.D., in *Pennsylvania M. J.*, Feb., 1940.

Physical Therapy in Alopecia

IT is not logical to relegate the various groups of electromagnetic wavelengths used in therapy to special water-tight compartments, and to refuse to use several of them in the treatment of one condition. Surely, all these therapeutic wavelengths are analogous to the drugs in the physician's dispensary, and are to be used, in carefully prescribed combinations, in the same manner.

In treating alopecia, I use infrared, ultraviolet, and short-wave diathermy treatments, either alone or in combination, as the case demands. In the treatment of *alopecia areata*, both infrared and ultraviolet therapy were used, exposing the scalp to infrared rays for a period of 20 minutes, at a distance of 20 inches, and following this by exposure to the carbon-arc lamp for periods up to 10 minutes, at a distance of 12 inches. After the third treatment, fine hair is usually visible. From 10 to 20 treatments are needed to stimulate hair growth over the entire scalp.—R. D. HOWAT, L.R.C.P., in *Brit. J. Phys. Med.*, Feb., 1940.

Topical Use of Sulfanilamide in Stomatitis

A CASE of ulcerative stomatitis, which had resisted all other forms of treatment, responded rapidly to the *local* application of powdered sulfanilamide. Extensive ulcerations of the pharynx responded to this treatment, supplemented by having the patient dissolve a tablet of sufanilamide on the tongue three or four times daily. It seems possible that, in certain infections of this type, highly invasive streptococci may play a part, and this factor would appear to explain the beneficial effects of the sulfanilamide.—J. L. LANE, M. D., and P. P. VINSON, M.D., in *Va. Med. Monthly*, Sept., 1939.

[Instead of sulfanilamide, which is almost insoluble, I have dissolved two 5-grain Neoprontosil (Winthrop) tablets in two ounces of water, for use as a throat spray and topical application with a swab. A persistent, mild streptococcic pharyngitis, in a girl of 24 years, disappeared within a few hours after "painting" the throat and having the patient suck one tablet every hour for four doses. This patient had not been relieved by previous local applications (silver nitrate solution and sprays of alkaline-antiseptic solution).—R. L. G.]

Short-wave Diathermy in Hypertension

THE application of short-wave diathermy to the carotid sinus and to the heart has given good results in the treatment of hypertension (nephritic, arteriosclerotic) and relief of headache and vertigo.—*Arch. Phys. Ther.*, Feb., 1940.

Postoperative Urinary Retention

MANY chronic and serious urinary tract lesions have their origin in mismanagement of the bladder during the convalescence from an abdominal operation.

The Johns Hopkins technic: One ounce of a 0.5-percent aqueous solution of Mercurochrome is instilled into the bladder while the patient is still on the operating table. This method has been used for 14 years. During this time, only one patient in 19 has been catheterized, as compared to one patient out of two in a control series, or 6.5 percent against 51 percent. Patients treated in this manner void earlier and in greater amounts, thus emptying their bladders more completely. In not one out of 500 cases did postoperative urinary tract infection develop.

Do not be afraid of catheterization, as the danger lies in urinary stagnation rather than in simple, aseptic catheterization. *Patients should be catheterized if they are distressed or if less than 100 cc. is passed at a time* (indicating incomplete emptying). In the outpatient department, we pass catheters several times daily, to obtain urines for diagnostic purposes, after swabbing the urethral meatus with two successive toothpick swabs dipped in 5-percent Mercurochrome solution. The ability of the patient to empty his or her bladder completely at subsequent voidings apparently prevents the development of cystitis.—J. D. WOODRUFF, M.D., and R. W. TE LINDE, M.D., in *J.A.M.A.*, Oct. 14, 1939.

Diagnostic Pointers

Allergic Vertigo

● If more common causes of vertigo are investigated without result, the patient should be subjected to an allergic study, especially if there is a family history of urticaria, asthma, eczema, or hay fever. *Allergic vertigo responds to the administration of epinephrin.*—Leo H. Criep, M.D., in *Penn. Med. J.*, Dec., 1939.

Exophthalmic or Toxic Adenomatous Goiter?

● Hyperthyroidism resulting from a toxic adenomatous goiter differs from exophthalmic goiter in that (1) after operation there is practically no tendency to recurrence; (2) often the patient is not aware of any abnormal symptoms; (3) exophthalmos does not occur nor do gastro-intestinal crises; (4) its course is usually gradually and steadily progressive, as contrasted to the fluctuations in the severity of exophthalmic goiter; and (5) usually there is no marked improvement following iodine administration.—S. F. Haines, M.D., in *West. J. Surg., Obst. & Gynec.*, Mar., 1939.

Vitamin A Deficiency

● A rough, grater-like skin may be the only sign of Vitamin A deficiency. In mild cases of deficiency, the *horny papules* are more easily felt than seen, and are to be found on the thighs, and less commonly on the arms, abdomen, back, neck, and face. The papules are formed by keratotic plugs projecting from hair follicles, frequently contain a broken off or coiled, unerupted hair, and may be as large as 0.5 cm. in diameter. They disappear rapidly after the oral administration of haliver oil. —E. Lehman, M.D., in *J. A. M. A.*, Mar. 3, 1940.

Rheumatic Carditis

● *Pain on walking*, felt in the upper left quadrant of the abdomen, is frequently associated with rheumatic carditis. It may be the *first* symptom noted by the patient, and antedate cardiac decompensation by years.—V. A. Digilio, M.D., in *Pennsylvania M. J.*, Oct., 1939.

The "Rectal Shelf"

● Mistakes in diagnosis are not infrequently made because of the fact that metastatic growths from distant sites encroach upon and even surround the rectum, causing symptoms referable to the lower bowel and findings misinterpreted as a primary rectal cancer. However, *the mucosa of the rectum is freely movable over the growth*, as it is not involved.

Coalescence of deposits produces a ledge, spoken of as the "rectal shelf" or "Blumer's shelf."—Harry E. Bacon, M.D., in *N. Y. St. J. of M.*, Dec. 15, 1939.

Endometriosis

● Endometriosis is common and one should be on the lookout for purplish spots (which may indicate misplaced bits of endometrial tissue) in every vaginal examination and in the abdomen of every woman operated upon. Endometriosis occurs in 25 percent of all fibroids and in 10 percent of all women operated upon abdominally.

A clue to the diagnosis, when the abdomen is opened, is that, if tubal adhesions are easily freed, one suspects gonorrhea or some other infection as the origin; if they are dense, one suspects endometriosis. Often the pelvic organs are fixed. A fullness of the *cul-de-sac* is a suggestive finding. K. J. Karnaky, M.D., in *South. Med. J.*, Oct., 1939.

Sinus Disease and Failing Vision

● Every case of failing vision of obscure origin should receive the benefit of a very careful examination of the sinuses, including roentgen-ray pictures by a competent roentgenologist and otolaryngologist. These cases are not common, but may be markedly relieved.—M. M. Cullom, M.D., in *South. M. J.*, July, 1939.

Vaginal Bleeding

● Vaginal bleeding or "spotting" that occurs within 24 hours after coitus or douching is highly significant of a cervical carcinoma—J. L. Southworth, M.D., in *Med. Ann. Dist. Col.*, Oct., 1939.

Pyrosis

● Cardiac angina sometimes causes pyrosis. For the differential diagnosis it is important to know that the pyrosis appears on motion and disappears when standing still.—Dr. Rudolf Schmidt, in "Aphorisms of Diagnosis and Treatment" (Urban and Schwarzenberg).

Ruptured Supraspinatus Tendon

● A patient in middle life, who, after a strain from lifting or a fall, feels a snap in the shoulder, accompanied by severe pain and inability to move the joint, should be considered as having a rupture of the supraspinatus tendon. He may carry on with his work, avoiding movement, or he may return home. From six to twelve hours later, the pain is severe. The lesion is difficult to diagnose clinically, usually because it is unsuspected. The only radiologic detail is the high position of the humeral head in the glenoid cavity. The most convenient method of treatment is to infiltrate the tender area with procaine, which frees the patient from pain and permits him to move the shoulder normally.—*Med. World* (Lond.), Feb. 23, 1940.

Thumbnail Therapeutics

Newer Treatment of Shock

● The single most important factor in the treatment of shock is *the replacement of blood by transfusions.* It has been proved that injections of saline solution tend to carry protein *out* of the blood stream into the tissues, thus tending to a later increase of the shock. A blood transfusion should be given as soon as possible, without awaiting the full development of shock. The patient should be kept warm and given adequate doses of morphine to relieve pain. Oxygen, if given with tight face mask, catheter, or oxygen tent, is of great value. —ALFRED BLALOCK, M.D., in *Am. J. Surg.*, Feb., 1940.

Hypothyroidism in Eclampsia

● Unless the eclamptic condition is too far advanced, we have been successful in treating all our toxemia of pregnancy patients with thyroid extract. The therapeutic and prophylactic use of thyroid extract, early in pregnancy, will prevent such toxemias in most cases.—W. B. PATTERSON, M.D., *et al.* in *Penn. M. J.*, Aug., 1938.

Vitamin A in Eye Disorders

● A series of 50 patients who complained of severe burning, itching, and excessive dryness of the eyes; a "scum" over the eyes; granulation and redness of the conjunctiva; and photophobia, were greatly improved following the administration of from 10,000 to 50,000 units of vitamin A, in the form of carotene in oil or Oleum Percomorphum. The burning, conjunctivitis, and photophobia disappeared and these patients were able to read better.—TOM D. SPIES, M.D., in *E. E. N. & T. M.*, Dec., 1939.

Dextrose in Diphtheria

● All patients who have had diphtheria for three days or more without receiving antitoxin, and all "bull-neck" (laryngo-tracheal) cases, should be given, in addition to large doses of antitoxin, from 500 to 1,000 cc. of 10-percent dextrose solution, intravenously, every day for 8 days or more, to minimize the *myocarditis* from which most of these patients die, if not thus treated.—ARCHIBALD HOYNE, M.D., F.A.C.P., Chicago, Ill.

Prophylaxis of Puerperal Fever

● Prophylactic treatment against puerperal sepsis should consist of the administration of 15 grains (1 Gm.), three times daily, of sulfanilamide. To cover the danger period, this should be given, from the time of the commencement of labor, for at least four days. It is not possible to secure prolonged immunity by a single dose, however large; nor is it possible, with smaller doses, to secure more than 12 hours' immunity. — *Med. World* (Lond.), July 14, 1939.

Thiamin in Herpes Zoster

● The subcutaneous administration of vitamin B_1 (thiamin) gives gratifying results in the treatment of herpes zoster. The pain is relieved more promptly, lesions clear up earlier, and the total disability time is notably decreased. Three thousand (3000) units have been injected daily or every other day.—M. J. GOODMAN, M.D., in *Calif. & West. Med.*, Aug., 1939.

Coramine in Alcoholic Coma

● Patients in alcoholic coma, and those under Avertin anesthesia, can be promptly restored to consciousness by an intravenous injection of from 1 to 5 cc. (or more) of Coramine, the dose depending on the condition of the patient. This effect is due to the increase in *tissue oxidation* produced by this drug.—FRANK WRIGHT, M.D., Chicago.

Ulcers

● Viscous balsam of Peru is applied to ulcerated portions of skin, which are then exposed for from 8 to 10 minutes to the action of sharply focused ultraviolet rays, at a distance of from 12 to 20 inches from a quartz lamp. The method has been used on crural ulcers, skin defects after operation, ulcer of the nasal septum, and burns from radium or diathermy.—*Med. World* (Lond.), Aug. 11, 1939.

Inadequate Anesthesia

● Never give a "whiff" of anesthetic and then proceed to carry out a shock-producing procedure, such as circumcision or reduction of a fracture. In nearly every case of primary syncope under anesthesia, it was found that the patient was not fully anesthetized and that some manipulation, however slight, had been begun. No anesthetist should be hurried in the induction of chloroform or ether anesthesia, and *nothing whatever* should be done until *full anesthesia* is reached.—A. DUFF, M.D., in *Brit. M. J.*, Jan. 21, 1940.

Anesthesia in Obstetrics

● Satisfactory anesthesia in labor can be obtained by injecting into the rectum 20 cc. of *paraldehyde in oil*, and repeating the dose every three or four hours, if and as required.—THEO. S. PROXMIRE, M.D., Lake Forest, Ill.

Thyroid Extract in Gout

● Thyroid extract, one-half grain daily, serves to increase the interval between the paroxysms and the general muscle tone and circulation, in gouty patients. Hydrochloric acid, also, is often indicated.—W. H. HOSKINS, M.D., in *Med. World*, Sept., 1939.

THE DOCTOR'S STUDY

New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

Of all the inanimate objects, of all men's creations, books are the nearest to us, for they contain our very thoughts, our ambitions, our indignations, our illusions, our fidelity to truth, and our persistent leaning towards error.—JOSEPH CONRAD.

Obstetric Difficulties

Titus

THE MANAGEMENT OF OBSTETRIC DIFFICULTIES. *By* PAUL TITUS, M.D., *Obstetrician and Gynecologist to the St. Margaret Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist, Pittsburgh City Homes and Hospital; Secretary of the American Board of Obstetrics and Gynecology. 368 Illustrations; 5 Color-plates. Second Edition. St. Louis: The C. V. Mosby Co.* 1940. *Price,* $10.00.

TITUS' first edition was a landmark along the road of obstetric advancement. In this second edition, he has included the use of sulfanilamide in puerperal sepsis and pyelitis, detailed technic of x-ray pelvimetry, technical operative advances, management of toxemia and of the anemias of pregnancy, improvements in obstetric analgesia and anesthesia, and advances in the treatment of sterility. Many new illustrations have been added.

He has retained the individual flavor of the first volume, and is not afraid to express his own ideas clearly and bluntly. This is the ideal attitude to take in writing a volume which considers emergency treatment, rather than the all-too-common habit of citing various references from the literature without indicating their relative value (as seen by the author).

The description and illustrations on ectopic pregnancy are practical. Those who have used the peritoneoscope in the diagnosis of this dangerous and often hard-to-diagnose condition wonder that Titus has never used the method, nor apparently ever seen it done.

There is no practitioner of obstetrics, or surgeon who is called in to see such patients, who should not have this book.

Physical Diagnosis

Elmer and Rose

PHYSICAL DIAGNOSIS. *Revised by* HARRY WALKER, M.D., F.A.C.P., *Associate Professor of Medicine, Medical College of Virginia, Richmond, Va. 295 Illustrations. St. Louis: The C. V. Mosby Company.* 1940. *Price,* $8.75.

ELMER and Rose is the standard by which all other texts on physical diagnosis are judged. The book has been enlarged by chapters on bronchoscopy, arrythmias and electrocardiography, and neuropsychiatric examinations. Pathologists and internists have been consulted as to the accuracy of the material. The physical signs of value are described, and also those of no value. "This procedure was deemed best because, in examining patients, the irrelevant as well as the relevant is always encountered."

The chapters are arranged in the order that the usual physical examination is carried out: general inspection, head, face, eyes, nose, mouth and throat, neck, and so on down.

Many excellent clinical photographs and illustrations are included. The text is written clearly and briefly. It is an ideal book for the student and diagnostician.

Cancer of the Larynx

Jackson and Jackson

CANCER OF THE LARYNX. *By* CHEVALIER JACKSON, M.D., Sc.D., LL.D., F.A.C.S., *Honorary Professor of Broncho-Esophagology and Consultant in Broncho-Esophagologic Research, Temple University Medical School, Philadelphia; and* CHEVALIER L. JACKSON, A.B., M.D., M.Sc., (MED.), F.A.C.S., *Professor of Broncho-Esophagology, Temple University Medical School. 309 Pages; 189 Illustrations and 5 Color Plates. Philadelphia and London: W. B. Saunders Company.* 1939. *Price,* $8.00.

IN this admirably arranged and immediately useful monograph, the first section, on "Procedures," informs the physician "what to do and how to do it, without logic, clinical evidence, or historical data, for the benefit of a particular patient in need of diagnosis and treatment."

The second section deals with general considerations, reports of cases, reasons for procedures advocated, symptoms of malignant disease of the larynx, types of growths, data on various types of surgical technics, and the etiology and prevention of laryngeal cancer.

The history of cancer of the larynx is reserved for the third division, so that the physician who wishes to learn of the gradual progress in knowledge of this disease may read it at his leisure.

Full details are given as to the various technics of surgical treatment (including wide-field and narrow-field laryngectomy) and treatment by irradiation. The Jacksons feel that every person with a possible malignant tumor in the larynx should be examined with the direct laryngoscope, inasmuch as the mirror may not permit a full or conclusive examination. They have no records that would indicate that a biopsy has ever resulted in acceleration or spread of a malignant process. They also feel that treatment should not be decided upon until the histologic structure of the tumor is known, and caution against trusting "negative" biopsies which failed to get a deep enough bite of the tissues.

The illustrations are excellent, especially the paintings in full color, and the clinical data, given on the opposing pages, permit easy correlation.

This book is of great value to all otolaryngologists, surgeons who perform laryngectomies, and oncologists.

Regional Anatomy

Johnston

A SYNOPSIS OF REGIONAL ANATOMY. *By* T. B. JOHNSTON, M.D., *Professor of Anatomy, University of London, Guy's Hospital Medical School. Fourth Edition. Seventeen Illustrations. Philadelphia: Lea and Febiger.* 1939. *Price,* $4.50.

THE author deliberately sets out to make the student carry on the dissection first, and then refer to the text for information. For this purpose, no illustrations are included except in the section on the central nervous system. Thus the student is encouraged to find the structures, instead of lazily glancing from a picture in the text to the structure under dissection. A further advantage is that the author thus has much more space in which to pack pertinent facts, of anatomic and surgical interest. The surgeon who feels that his anatomy is getting a bit "rusty" could do no better than rent a cadaver at his state university medical school and study it with the aid of this text. It might be well if the author would collect these brilliant brevities and publish them, *together with appropriate illustrations,* in a book for the use of the practitioner.

The author's style is direct and simple, without the complicated and cumbersome method of describing relations, so favored by most anatomies. The upper limb, the lower limb, the thorax, the abdomen, the head and neck, the central nervous system, and the bones are taken up, in that order, and important structures discussed successively.

Injuries of the Head and Spine

Brock

INJURIES OF THE SKULL, BRAIN, AND SPINAL CORD; Neuro-Psychiatric, Surgical, and Medico-Legal Aspects. *Edited by* SAMUEL BROCK, M.D., *New York University, with 22 Contributors. Baltimore: The Williams and Wilkins Company. Price,* $7.00.

THE twenty-two contributors have written a group of monographs on the various neurologic, psychiatric, neurosurgical, radiologic, and medicolegal aspects of physical injury to the head or spine. Of special interest to the general practitioner and surgeon are those articles concerning the immediate diagnosis of hemorrhage within the skull, birth injuries of the brain and spinal cord, concussion of the brain, and the neuroses that follow brain injuries.

As the neurologist, industrial surgeon, and general practitioner realize, the mental and psychic sequelae of skull injuries are often disabling, always distressing, and frequently prolonged. Schilder's description of neuroses following head injuries is a masterpiece. It well describes the adult reactions, as well as the acute fright reactions in children.

Chemistry

Roe

PRINCIPLES OF CHEMISTRY. An Introductory Textbook of Inorganic, Organic and Physiological Chemistry, for Nurses and Students of Home Economics and Applied Chemistry. *By* JOSEPH H. ROE, Ph.D., *Professor of Biochemistry, School of Medicine, George Washington University, Formerly, Instructor in Chemistry, Central School of Nursing, Washington, D.C. Fifth Edition. St. Louis: The C. V. Mosby Company.* 1939. *Price,* $3.00.

IN this volume, the author has achieved an air of practicality and usefulness which is lacking in most chemistry books. The chapter headings (atmosphere, water and hydrogen peroxide, solution, acids and bases, hydrogen, oxygen, foods, digestion, blood, et al) indicate to the student that a tremendously important field is being covered. Throughout the discussion, dominant points are brought out in italicized sentences. Emphasis is thus placed on the larger aspects of biochemistry, instead of the usual nose-to-the-wheel memorization of meaningless formulas and reactions.

The subject is made interesting by practical applications, wherever possible, especially in the chemistry of nutrition. The fascinating occurrences that take place around us are well portrayed, and a full-color photograph of nature's "Carbon cycle" inserted in the chapter in atmosphere.

In 495 pages, the author presents the fundamentals of organic, inorganic, and physiologic chemistry, together with laboratory exercises which drive home the usefulness of such knowledge. It is unfortunate that most chemistry courses are so short that much of this information cannot be assimilated.

Massage and Exercises

Tidy

MASSAGE AND REMEDIAL EXERCISES IN MEDICAL AND SURGICAL CONDITIONS. *By* NOEL M. TIDY, *Member of the Chartered Society of Massage and Medical Gymnastics; T.M.M.G., late Sister-in-Charge of the Massage Department, Princess Mary's Royal Air Force Hospital, Halton. 458 Pages; 182 Illustrations. Fourth Edition. Baltimore: The Williams & Wilkins Company.* 1939. *Price,* $5.25.

THIS popular textbook is far more comprehensive than its title would suggest. The various surgical and medical conditions for which massage or some form of remedial exercise or manipulation is indicated are discussed in such detail as to provide for a thorough understanding of the accidents, disabilities, and diseases for which the treatment is advised.

Fractures; dislocations; muscle injuries; wounds and scars; diseases of joints, synovial membranes, and bones; lesions of the peripheral nerves; deformities of the upper and lower extremities and of the spine; constitutional diseases; and abdominal and pelvic conditions, are only a few of the major chapter titles which, with their subdivisions, concisely yet comprehensively discuss general symptoms, principles of treatment, splinting or other means of support, operative interference, etiology, pathologic changes, general and medical treatment, physical treatment, manipulation, and massage.

The numerous photographs and drawings facilitate a clearer understanding of the subject matter, which is well presented and easily read and comprehended. This is one of the best books of its kind; one which every massage operator, physical therapy technician, and physicians in general, should possess for consultation and frequent study.

J. E. G. W.

Skin Diseases

Warren

HANDBOOK OF SKIN DISEASES. A Practical Guide to Diagnosis and Treatment. *By* LEON H. WARREN, M.D. *Acting Assistant Surgeon. (Dermatology) in the Office of Dermatoses Investigations, United States Public Health Service; Assistant Dermatologist, Philadelphia Methodist Hospital; etc. With a Foreword by* F. D. WEIDMAN, M.D. *New York and London: Paul B. Hoeber, Inc., Publishers, Medical Book Department of Harper and Brothers.* 1940. *Price,* $3.50.

AT first glance, this handbook-size volume would seem too small to be of use, and its brief, telegraphic style of diction would seem to confirm such an impression; but it proves to be erroneous.

The author presents, first, a section on general therapy, which covers many *detailed* methods of treating skin diseases. His advice on the careful, painless removal of crusts and the roofs of blebs, with a sharpened applicator and curved manicure scissors, is worth the price of the book. A careful mechanical cleansing of the field, not only gives the dermatosis its first impetus toward healing, but also impresses the patient with the fact that the physician is *"doing something."* Full instruc-

tions are given as to various medications; cautions are suggested; and various other methods of treatment (injections, ultraviolet, infra-red, and roentgen ray therapy) are discussed. The important features of 252 skin diseases are then set forth, as briefly as possible.

Such a book is tremendously valuable to the busy physician, as he can confirm or disprove a diagnosis in a minute, and read of the various types of treatment. The author encourages the consultation of more complete texts, when further information is needed.

Obstetrics and Gynecology

Kerr

COMBINED TEXTBOOK OF OBSTETRICS AND GYNECOLOGY. For Medical Students and Medical Practitioners. *Revised and Rewritten by* J. M. MUNRO KERR, LL.D., M.D., F.R.C.P. & S. (GLAS.), *Professor Emeritus of Midwifery, Glasgow University, and Eight Obstetricians, Pediatricans and Radiologists. Baltimore: The Williams and Wilkins Company (A William Wood Book).* 1939. *Price,* $12.00.

IN this third edition of the combined text, the wisdom of the authors in presenting both subjects in one volume becomes apparent. Repetition is avoided, new advances relevant to both fields are included without undue bulk, and the medical mind is led to consider the interdependence of the two specialties.

Full details are given of the lower-segment Cesarean section, including Marshall's 245 consecutive sections without a death (a final and convincing proof that the classical operation should never be used after labor is in progress).

This is an admirable text for the student, and of reference value to the general practitioner.

Certain sections, notably that on local anesthesia and sedative-narcotic preparations, give but little detail. No mention is made of procaine infiltration into the perineum to render the second stage of labor much less painful and to markedly decrease the amount of inhalation anesthetic needed. Little information is given, except for the names and doses, of the analgesic-hypnotic drugs. Too little detail of operative procedures is given to be of any practical value.

Gross Anatomy

Howell

GROSS ANATOMY. A Brief Systematic Presentation of the Macroscopic Structure of the Human Body. *By* A. BRAZIER HOWELL, *Associate Professor of Anatomy, Johns Hopkins University School of Medicine. New York and London: D. Appleton-Century Company.* 1939. *Price,* $6.00.

AS Professor Howell states in his introduction, the hours that the student may devote to gross anatomy are diminishing year by year, under pressure of other subjects in the medical curriculum. At the same time, the student is confronted by a huge text, or rather reference, book in whose many ramifications he soon becomes hopelessly enmeshed.

This comparatively small volume (372 pages) is intended to serve as a means of orientation to him, to present only the facts that are most important for him to know, and to avoid those details which he will soon forget, but to which he may readily refer.

This purpose is well served by the clear discussions and the pen and ink sketches (of which there are too few). It would seem that more illustrations, especially colored plates, to depict important anatomic regions, would make the book more valuable to the bewildered student who is forced to read pages of description, although this need would be partially obviated by display of careful dissections and illustrations in the anatomy laboratory.

It is certainly successful in introducing embryology interestingly and cleverly into close correlation with gross anatomy.

Surgical Treatment

Farquharson

ILLUSTRATIONS OF SURGICAL TREATMENT. Instruments and Appliances. *By* ERIC L. FARQUHARSON, M.D., F.R.C.S.E., *Tutor in Clinical Surgery, Royal Infirmary of Edinburgh; With a foreword by* SIR JOHN FRASER, M.C., M.D., F.R.C.S.E., *Regius Professor of Surgery, University of Edinburgh. Baltimore: The Williams and Wilkins Company.* 1939. *Price,* $6.50.

THE general surgeon and busy general practitioner will welcome this picture-filled manual. Hundreds of clinical photographs illustrate every type of fracture and methods of treatment, as well as instruments and appliances used in the various fields of surgery. Practical points are given, which are so often dismissed as unworthy of space in larger texts. Much space is devoted to technic of plaster application.

The young practitioner and resident on a surgical service will learn much from Farquharson.

Cosmetic Treatment

Lazar

MANUAL OF COSMETICS. By CHARLES LAZAR, M.D. *Cleveland, Ohio (Edgewater Branch P.O.): The Sherwood Press. 300 Pages, 12 Illustrations.* 1940. *Price,* $5.00.

IT is unfortunate that such a worthwhile book is liable to be overlooked because of its unfortunate title. This is no mere account of the various cosmetic medicinals, as he who runs might think, but rather it is a complete treatise on the care of skin disorders affecting the appearance, and methods of retaining normal beauty. It is an attempt to lift cosmetic methods out of the ballyhooed beauty parlors and into the physician's office, whether he be a dermatologist, internist, or general practitioner. Some millions of women, in the great cities and tiny hamlets, are paying sums larger than the total amount paid for medical care, to imperfectly-trained "beauty" operators.

Full details are given as to the care of the skin; the treatment of disorders of the sebaceous secretion; methods for the care of the face, according to the degree of greasiness of the skin; superfluous hair (including chemical and electrical epilation); tumors (treatment by the cautery, diathermy, or freezing); scars; anomalies of pigmentation; baldness; disorders of the nails and of the sweat glands.

The author's advice is practical and effective. His method of treating acne gives gratifying results. It is to be hoped that many physicians will purchase this, the only book of its type.

Cardiovascular-Renal Disease

Smith *et al.*

CARDIOVASCULAR-RENAL DISEASE: A Clinico-pathologic Correlation Study with Ophthalmoscopy. *By* LAWRENCE SMITH, M.D., *Professor of Pathology;* EDWARD WEISS, M.D., *Professor of Clinical Medicine;* WALTER LILLIE, M.D., *Professor of Ophthalmology;* FRANK KONZELMANN, M.D., *Professor of Clinical Pathology; and* EDWIN GAULT, M.D., *Associate Professor of Pathology, all of Temple University School of Medicine, Philadelphia. New York and London: D. Appleton-Century Company, Inc.,* 1940. *Price,* $4.50.

APPLETON is to be congratulated on the excellent appearance and printing of this monograph. The glossy paper permits good reproduction of gross and photomicrographs. The five co-authors have endeavored to bring together the important clinical and pathologic features of heart, blood-vessel, and kidney disease, by comment and case history.

The internist and medically-minded general practitioner will find it of great value, inasmuch as the confusion which has existed in this field for many years is cleared. The place of ophthalmoscopy in the diagnosis of such diseases is well explained, and illustrated with photographs of various fundi.

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